American Aviation

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Mr. Putnam Reveals A Hoax

A HOAX is being perpetrated on the airlines of the United States and before the hot breath of the bankers gets any hotter the Civil Aeronautics Board had better stop wandering off on tangential side-shows and set things right.

The Post Office Department is concealing a vast profit on the air mail service at the expense of a financially-crippled airline industry. Meanwhile the CAB dawdles along exploring all sorts of blind-alley reasons for the airline troubles without discharging its chief responsibility by tackling the most important single problem.

by W. W. P.

The CAB should read very carefully a speech prepared for delivery on November 30 in Evansville, Ind., by Carleton Putnam, chairman of the board of Chicago and Southern Air Lines. Mr. Putnam has not been satisfied with the mysterious cost ascertainment figures compiled by the Post Office Department. His investigations and studies reveal the startling fact that the P. O. Department is $54,000,000 ahead on the entire air mail service since its inception, after deducting *all* costs.

It is a story tantamount to fraud, a story of the bilking of investors who had faith in the future of an air transport industry, a story of a government agency shamelessly permitting an industry to face financial collapse, a story of short-changing a public utility whose record is remarkable in the face of national inflation and postwar adjustment.

The issue is all too clear. The airlines don't want and don't need to be "bailed out". They don't want and they don't need "subsidy". They don't want any help that isn't earned. All they want is a return of at least part of the mail pay stripped from them in 1945—*a fair and reasonable mail pay which doesn't cost the taxpayers a cent.*

Air mail pay is not the sole cure to today's airline problems. It isn't the sole answer. But it is now all too clear that if the CAB acted honestly on air mail pay, a very large portion of the industry's problems would be eliminated. *And without grabbing into the taxpayers' pocketbooks.*

Over a hundred years ago Congress instituted a policy of granting aid to transportation companies. The railroads were granted heavy subsidies in the public interest and in the ensuing hundred years the

(*Turn to Page* 5)

Directs Two LAS Bases

Marc T. Worst, v.p. of Lockheed Aircraft Service and manager of the LAS base at Burbank, Calif., has in addition been given operational direction of the company's base at MacArthur airport, Sayville, Long Island. Former manager of LAS operations at Shannon, Eire, Worst is in his 20th year in the aviation industry.

(See story on page 25)

In This Issue

Domestic Airline Losses At Record Level 9

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REFERENCE COPY

MANAGEMENT SALES OPERATIONS

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of Stratocruiser's Range

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EDITORIAL

(CONTINUED FROM PAGE 1)

rails have probably more than paid back the help given to them. The water carriers have been aided heavily and probably never will return the subsidies—but the public interest has outweighed the cost to the taxpayers. Congress also determined on a policy of subsidy aid to develop a sound air transport system.

What has happened is that the airlines even during a short developmental period (which isn't yet over by any means) have not only repaid the Post Office Department for its earlier subsidies, but have returned a very handsome profit. And in this critical postwar period of expansion and adjustment, the airlines have been denied the use of this development money which Congress intended that they should have. They are performing useful services for carrying the mails—and facing receiverships because they aren't getting paid.

Now to return to Mr. Putnam and his discovery.

How much does the air mail service cost? This has long been a controversial subject, for there are both direct and indirect costs. The direct cost is easy to determine for this consists of direct payments to the airlines. For a long time the payments to the airlines have been less than the income to the Post Office in air mail stamps bought by the public. The airlines have well covered the direct costs and this has been widely recognized.

But the P. O. does have other costs such as salaries for all clerks and officials handling air mail, airport facilities, trucks, and the like. The Department has what it calls a cost ascertainment system to determine how much of its general costs should be apportioned to various classes of service of which air mail is one.

According to the P. O., the air mail service has been operating at a deficit when all of these indirect costs are apportioned. But no one has been able to go very deeply into this cost ascertainment formula because the P. O. has been a little vague as to how it's made up.

Mr. Putnam went to work and came up with some answers. He started on this thesis: if every airplane now in service were suddenly whisked off the earth and the air mail service just disappeared, how much would the P. O. save in costs?

He discovered that 60% of the cost ascertainment is true added costs, i.e., in clerks hired especially for the air mail, airport facilities, and the like. In other words, 60% of the over-all costs which the P. O. says are traceable to air mail, are honest and true costs which should be charged up to the air mail service.

But 40% of the total costs, he found, are pure apportionment of general P. O. overhead, i.e., costs which would continue regardless, even if every airplane suddenly disappeared.

Mr. Putnam subtracted this 40% from the total cost which the P. O. says is due to the air mail service, and came up with the surprising fact that the taxpayer has netted—over and above all costs—a nice figure of $54,000,000 since the start of the air mail service.

If the airline industry were fully developed, it would be right and proper for the air mail service to be turning in a good profit. If the airlines today were in the black, a profit would be fully expected. But the airlines are in financial trouble. Some are facing very serious trouble in a matter of months. It is not right that this developmental financial aid which Congress authorized is not available to the airlines.

Some of the sneering little bureaucrats on the CAB staff who have been putting airline executives through ridiculous inquisitions seem to have the idea that airlines today are inefficient and uneconomically operated. Some of these bright academic lads who have never earned a dollar in their entire lives except on the public payroll or in some cloistered surrounding, have gone to absurd lengths in trying to mastermind airline operations, something they know about only from a sideline.

But despite numerous admitted faults and deficiencies, the airlines have performed almost a miracle in lowering costs in the face of steadily rising inflation. Several months ago we referred to the increased efficiency and lowered costs on Braniff Airways. Last issue we referred to United Air Lines.

In his Evansville speech Mr. Putnam said that in 1941 Chicago and Southern was breaking even with a mail pay amounting to 24¢ a ton mile. Today it can earn a fair profit with mail pay of 16¢ a ton mile. This is a decrease of 33% in dependence on the government in the face of a 62% increase in the cost of doing business. Can any other industry in the United States match this record of the airlines?

The CAB will have a major scandal breaking over its head unless it comes down to earth to tackle the major problem today—air mail pay. The record is very clear. The facts are abundant. The Board has ignored both the spirit and mandate of Congress and the actual credit figures on the books.

Safety Comes First

ANOTHER winter is here with all the attendant problems of safety versus on-time performance. During the spring, summer and fall great strides were made in increasing the reliability of air service. But now is the time to sacrifice on-time arrivals in favor of an extra margin of safety. Each successive winter shows improvement in operating factors, but gradual progress is preferable to an incautious exertion toward schedule completion.

Even though all-weather operations are still in the distance, the installation of instrument landing systems during this year will increase performance figures materially this winter without compromising safety principles. Milton Arnold, v.p. of operations for the Air Transport Association, estimates that 56% of all airline cancellations of last winter can be eliminated this season. This is a remarkable improvement, but caution is still the best advice. A perfect safety record is preferable to a too-hasty progress toward the ultimate goal of all-weather operations.

WAYNE W. PARRISH

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BACKGROUND & TRENDS

$20 Million Market? *There are indications that the airlines may break the railroads' virtual monopoly on the carriage of military personnel. For 25 years, the railroads have signed an annual agreement with the military under which personnel traveling on orders get a 10% discount. Agreement contains so-called "exclusive" clause, which has been interpreted to mean that personnel must travel by train unless they can present an iron-clad case for going by air. If airlines can get concurrence of CAB and sign an agreement, giving a discount and knocking out the railroads' exclusive clause, they will be in a $70-80 million market. Industry officials estimate airlines could get $20 million of this annually.*

Passenger Traffic Down: Domestic airline traffic for calendar 1948 probably will be 3-4% below 1947 totals of 12,250,000 passengers and 6 billion passenger miles, despite travel stimulus offered by family fare plans and round-trip discounts. However, this is merely part of the overall lessening of domestic travel. Rail travel for this year will be down more than 10% from 1947, bus traffic down about 5%. One of few reports available for October—that of United Air Lines—shows an 11% decline from same month a year ago, 7% decline from September.

Fare Increase Diluted: *The maze of discount schemes placed into effect by domestic airlines since the 10% passenger fare increase of last September has severely diluted the airline rate of return. W. A. Patterson, United Air Lines' president, figures the anticipated 10% increase in revenue passenger has been reduced to an actual gain of only 2.2%.*

Battle for Business: An all-out battle is being waged between TWA and American for the movie industry's passenger business. Howard Hughes, who recently bought control of RKO, has swung a lot of Hollywood traffic to his TWA. But American is combating strongly.

One Less Visa: *American tourists soon should be free to travel to Great Britain without necessity of getting a visa from British government. Britain has agreed to waive visa requirements for American visitors, and, in exchange, the U. S. is expected to drop all fees charged for issuing passport visas to British tourists.*

Less Instead of More: Despite obvious need of airlines for more equitable mail pay and despite likelihood of higher rate awards by CAB, Post Office Dept. has asked Budget Bureau approval for a little over $41,000,000 for fiscal 1950 domestic air mail appropriation. This compares with about $47,000,000 being spent during present 1949 fiscal year. In explaining the decrease in figuring 1950 funds, PO states that it must use present temporary mail rates and allow for probable lower rates to feeders under sliding scale.

Quiet, But Pending: *Little is being said about it at present, but air mail officials at Post Office are still pushing for amendment to Star Route legislation to permit operation of a substantial number of air star routes. Nothing was done at last session of Congress, but look for the request to be renewed next session.*

PO to Hold Line: While new Congress probably will boost mail rates in some categories to give Post Office additional revenue, it's unlikely that air mail postage will be affected. Raise to 6c next January was over PO opposition, and PO will not seek higher rate here in search for more income.

CAB in Court: CAB may ask U. S. Court of Appeals for Seventh Circuit (Chicago) to reconsider its Freight Forwarder Case stay order (see page 29). Several forwarders directly affected may also seek reconsideration. CAB has stopped issuance of future letters of registration to forwarders, in keeping with court's order, but is not yet sure about what should be done to the five authorizations already granted, about which the court was silent. Airlines' appeal of the CAB decision which brought about the court stay order will be a fairly expensive undertaking. One source estimates that it will cost about $30,000 just to print those parts of the 9,000-plus page record which must be presented to court.

Bigger Air Budget Wanted: *Joint Chiefs of Staff are pressing efforts to get President Truman to raise top limit of proposed fiscal 1950 military budget from $15 billions to $17.5 billions. Latter figure would make possible a 66-group Air Force instead of 51 under the smaller amount. Under a $17.5 billion program, the AF might get as high as $5.9 billions, the Army $5.7 billions, the Navy $5.3 billions.*

Wearing Out: Problem of replacing cargo planes being worn out in the Berlin air lift is now receiving serious attention from Air Force officials.

Manufacturing Mergers: *Talk of mergers is not confined to airlines these days. Discussions reportedly are underway among three of larger aircraft manufacturing firms, one eastern and two western. Idea has been tried before and failed, but may click yet despite complexities involved.*

Canadian Packet: Agreement should be signed soon allowing Canadian aircraft manufacturers to produce the Fairchild Packet under licensing agreement. U. S. Air Force is understood to have given its approval.

Cutting Instrument Confusion: *United Air Lines is working on a project to standardize instrument panels of DC-4's and DC-6's to such an extent that all instrument switches and controls will be in same location in both types.*

Standing Still: U. S. is making little progress toward the goal of 100,000 serviceable air markers considered desirable by CAA. Although more than 4,000 have been installed during 1947 and 1948, the country has only 5,000 serviceable markers in existence today, because of high rate of deterioration. Of these 4,000 new installations, 3,007 were contributed by state governments and various organizations, 226 by CAA in the marking of its own buildings and 893 through small amount of Federal money available for this purpose. Average air marker lasts for maximum of three years without repainting and many installed during 1945 and 1946 now are too faint to be visible at average flight altitudes. There is little hope of reaching goal under present methods of installation.

Flying for Business: *Recent CAA survey of 1,481 licensed pilots in California confirms what industry should now know: business is the biggest single incentive in use of personal aircraft. Among those who flew most, 86% gave as purpose of their flying either business only or business and pleasure combined. Only 25% in least active pilot group said they never fly for business.*

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Mail Rate Action Needed:

Domestic Airline Losses Reach New High in '48

By KEITH SAUNDERS

Unless the Civil Aeronautics Board acts quickly and realistically on pending applications for mail pay adjustments, the domestic airline industry will probably finish 1948 with an aggregate loss greater than the $20 million deficit of last year.

With all reports to CAB in except Eastern Air Lines' sheet for September, the 16 domestic trunklines had lost an indicated $12,000,000 in the first nine months of 1948, and if history repeats itself they probably will drop another $10,000,000 or more in the current quarter.

That is what happened last year, when they went into the fourth quarter with a net loss of a little over $11 millions and wound up the 12-month period with a loss of over $20 millions. And in 1946, they had entered the final quarter with a profit of $3.3 millions, only to end up the year in the red to the extent of $7,200,000.

It has been a rough year all around on the airlines, and such favorable factors as improved on-time performance, fare increases, rigid economies and a record volume of air freight have not sufficed to prevent the carriers' aggregate deficit for the first nine months of 1948 from reaching an all-time high.

Revenues were up a little, it was true, but what hurt was an increase in operating expenses from about $276,000,000 the first three quarters of 1947 to $306,-300,000 in the comparable 1948 period, including a big increase in depreciation charges this year.

Revenues Up. Despite a drop-off in passenger traffic, as compared to the first nine months of 1947, passenger revenues were up about $22 millions this year—$249,496,000 as against $227,-287,000—thanks to the two passenger fare increases put into effect this year.

Mail revenues were up, too, from about $17.2 millions to $25.3 millions, due largely to the mail rate increases granted this year to Delta, Braniff, Chicago & Southern, and Continental Air Lines, and temporary boosts given the Big Five.

Express revenues, on the other hand, fell off from about $7.8 millions through Sept. 30, 1947, to about $7.1 millions in the same period this year. Air freight, however, brought in about $5,750,000 this year, as against about $5,180,000 in the first nine months of 1947.

Top loser for the 1948 nine-months period was American Airlines, which dropped $3,769,825, despite profitable second and third quarters. Also deep in the red ink column were Northwest, with a loss of $2,992,634; TWA with a deficit of $2,795,795; and United with a loss of $2,761,125. Others in the red for over a million dollars were Capital, National, and Western.

Big money-maker, as usual, was Eastern Air Lines, with a profit of about $3.6 millions for the first eight months. Others in the profit column included Braniff, C&S, Colonial, Continental, Delta and Inland.

For the nine months, seven carriers reported net profits, while nine reported losses.

3rd Quarter Best. The third quarter was by far the best quarter of the year, with 12 of the 16 airlines showing a profit and only four in the red. Aggregate net profit for the period was $1,-831,248. An aggregate profit of $1,322,004 was shown in the second quarter, with eight lines reporting net losses and eight showing net profits.

It was the first quarter, as usual, with its bad operating conditions and low load factors, which really set the airlines back. Eastern alone showed a profit in that period, with the other 15 showing losses ranging up to a whopping $5,053,510 for American and $3,401,293 for UAL. Aggregate net loss for the period was $15,400,645. This was the second most disastrous quarter in airline fiscal history, being topped only by the first quarter of 1947, when the aggregate deficit was $15,664,730.

What the final 1948 record will be is a difficult question to answer at this writing, but a loss of more than $20 millions for the year is indicated. This loss should be reduced substantially when the Civil Aeronautics Board finally gets around to acting on mail rate increases for which the Big Five carriers have applied and award the carriers lump sum payments covering this year's operations.

But any way you look at it, 1948 undoubtedly is going down as one of the reddest financial years in airline history.

Damon Sees Profits Soon

When are the airlines going to turn the corner and start showing a profit again? Few prophecies have been ventured on this subject in recent months, but one top airline executive predicted last month that the airlines will soon be-

Net Profit-Loss for Domestic Trunklines

(Compiled from Company Reports filed with CAB)

Airline Rank According to Profit	First Nine Months	3rd Quarter	2nd Quarter	1st Quarter
Eastern	$ 3,669,571	$ 1,683,202*	$ 565,467	$ 1,420,902
Delta	668,869	137,359	1,063,386	—531,876
C & S	364,326	95,905	603,216	—334,795
Braniff	273,771	796,006	—12,026	—510,209
Continental	136,889	139,982	93,293	—96,386
Inland	71,706	77,235	20,392	—25,921
Colonial	22,904	205,762	—21,789	—161,069
Mid-Continent	—18,032	14,280	72,602	—104,914
Northeast	—802,226	51,725	—329,722	—524,229
Western	—1,231,649	—221,515	—355,306	—654,828
Capital	—1,399,412	21,288	—174,842	—1,245,858
National	—1,784,611	—869,369	—195,262	—719,980
United	—2,761,125	398,220	241,948	—3,401,293
TWA	—2,795,795	—1,113,302	—196,088	—1,486,485
Northwest	—2,992,634	—680,851	—341,589	—1,970,194
American	—3,769,825	1,095,321	188,364	—5,053,510
Totals 1948	—12,347,273	1,831,248	1,322,004	—15,400,645
Totals 1947	—11,018,493	3,785,054	861,182	—15,664,730
Totals 1946	3,340,739	2,370,358	3,598,232	—2,627,851

* Eastern's figure is for July-August only, since September report has not yet been filed with CAB.

Note: Airline reports to CAB from which these figures were taken are subject to revision with receipt of later mail pay adjustments.

gin to show profits, provided economic conditions do not change radically.

Ralph S. Damon, president of American Airlines, made the statement in a Nov. 12 speech in Oklahoma City in which he pointed out that break-even load factors have been reduced by most of the scheduled air carriers, that air freight loads are at a record level, and that the imbalance between airline revenues and expenses is being brought into line.

The total travel market is dropping, Damon said, but the airline share of the total is increasing. He said American Airlines, in a program aimed at offsetting effects of the general decline in travel, is currently engaged in "perhaps the greatest effort in the history of air transportation to stimulate new business."

Next Problem. Speaking later in the month before the Society of Security Analysts in New York, Damon declared that the next potent problem of the airlines will come if present travel volume drops to the 1941 level, which was itself higher than any in the preceding 20 years. This would be a drop almost comparable to the decline from 1945 to 1946.

Tracing total air, rail and bus intercity passenger miles over the past decades, Damon explained: "During the 1920's travel remained fairly constant at 30-odd billion passenger miles a year. It nosedived after 1929 to a low of 18.4 billions in 1932 and climbed slowly up to the 30 billion mark again in 1940. Then it leaped to 39.7 billion in 1941 and had trebled by 1944, due to troop movements and other wartime travel. It contracted from 116 billions in 1945 to 89 billions in 1946, down to 67.4 last year. We estimate it will drop to 61 billions this year.

"Although total travel is lessening, the airlines are getting a larger percentage of what there is than ever before. While our figures indicate rail travel will show a falling off of 12% this year, and bus travel 5%, the airlines will experience a drop of only 3.5%. In the event of a depression bringing volume down to the 1932 level, all traffic will be heavily off, possibly as much as 75%. It's a guess whether bus, rail or air traffic would suffer most."

The acid test of airline management and of the airlines as an industry, he declared, will come with a serious drop in total travel.

'CAB, Like the Lord'

A guarded note of hope was sounded last month by Warren Lee Pierson, board chairman of Trans World Airline, who observed that the "revitalized membership" on the Civil Aeronautics Board is accepting its responsibilities for the encouragement and development of commercial aviation in the U. S.

He told the TWA Management Club in Kansas City that CAB has now "retrieved a situation during which the Board was undermanned, overworked and apparently reluctant to face rate and route problems as realistically as was required by the collapse of the war-born boom in our industry." Present membership of CAB, he said, has "at long last become alerted to the serious plight of the airlines."

The TWA executive warned his listeners, however, that "the Civil Aeronautics Act requires the CAB, like the Lord, to help only those who help themselves."

He proposed a three-point program of (1) continued effort for safety, on-time performance and good service, (2) courteous treatment of the public, particularly in cases of delays; and (3) an active selling campaign for every TWA employe to sell at least $100 of extra TWA transportation in the next six months.

"For months we have been reading and hearing about the terrible things wrong with the airlines," Pierson said. "Let's face the facts and not kid ourselves. There are two types of difficulties facing the airlines. The remedy for one must be supplied by CAB, and the other we must provide ourselves."

Financial Cooperation Urged

Airline treasury departments have been called upon to cooperate more closely in exchange of ideas and information so that improved methods and lower costs might be achieved by all carriers.

Leo R. Gilleran, TWA controller, speaking before ATA's Airline Finance and Accounting Conference in Memphis, Tenn., suggested that "the treasurers set up a timely and voluntary interchange of financial and statistical data between their companies, comparable to reports presently filed with the CAB." In this way comparative weaknesses could be determined and corrective action taken.

By submitting reliable forecasts and usable historical facts to policy-making executives, Gilleran declared, airline treasurers can give their respective managements the necessary background for making the best possible decisions.

Odlum Confident of Loan

Floyd B. Odlum, chairman of the board of Consolidated Vultee Aircraft Corp., is confident that the Reconstruction Finance Corp. will act favorably on Convair's request for a $43,000,000 loan to start the Convair Equipment Corp. Odlum stated last week that he expects RFC approval within 30 days, and that at least one airline, whose board has already approved, will sign a lease with the corporation by that time.

The $43,000,000 requested of RFC represents 73% of the total amount ($60,000,000) required to start CEC, the remainder to be supplied by Convair. The corporation will buy 100 Convair-Liners and lease them to airline operators for four-year periods with options to purchase the aircraft.

The terms of the lease call for a flat sum payable monthly for 48 months plus an additional variable charge of 1/3c per passenger mile on a minimum utilization basis of eight hours per day. At any time during the first three years of the lease period the operator may exercise his option to buy the leased plane. The purchase price would be determined by the amount of time he has operated the plane, with allowances for depreciation. However, the amount of money he has paid under the lease agreement will not be applicable to the purchase price.

Under the lease agreement, the operator will operate the plane as if he owned it outright. He will be responsible for maintenance and any modifications which might become necessary. CEC will supervise the operator's handling of the plane, but such supervision will not extend to any part of the actual operation. CEC expects no CAB builder-operator difficulty. CAB is now studying Convair's part in the formation and operation of CEC and will give its clearance prior to RFC approval of the loan.

In the initial stages, CEC will be wholly subsidiary to Convair, but later Odlum plans to make it independent. Other manufacturers have consulted Odlum and expressed interest in placing their planes under CEC. The formation of CEC is, for the present at least, entirely contingent upon RFC approval, since there is little hope of raising $43,000,000 elsewhere.

Parks Seeks $600,000

The Reconstruction Finance Corp. is now considering an amended application of Parks Aircraft Sales and Service, Inc. for a $600,000 loan intended to finance operations of Parks Air Lines. First application filed by Parks last June was informally turned down.

Original negotiations were opened last February, according to statement by Oliver L. Parks, president of the airline. Formal application was sent from RFC's St. Louis office to Washington late in August. Informal talks were held between RFC and CAB, which must give its approval for any RFC loans to or for the benefit of airlines. CAB is understood to have indicated that the original terms were not suitable and that a greater proportion of equity capital in the airline was desirable. Parks was informally notified of the Board's view and amended the application.

The new loan request, it is understood, indicates that $300,000 of the total will be used by Parks Aircraft to buy stock in Parks Air Lines. The remainder will be lent to the carrier.

In testimony at a recent CAB hearing, Parks stated that if the loan is not approved, he would favor selling property now owned by the Parks enterprises, including airfields at East St. Louis and Columbus. This property would be pledged as collateral for the loan, if RFC grants it.

ROUTE CASES

NAL Procedure Set

Whatever the final outcome might be, there no longer was any doubt this week that the Civil Aeronautics Board meant to follow through in the National Airlines Dismemberment Case—and with as much dispatch as the legal formalities would permit.

First step was the calling of a prehearing conference, which was to be held before an examiner on Monday, Nov. 29. Further dates—all tentative—are: exchange of exhibits, Jan. 3; hearing, Jan. 17; briefs to the Board, Feb. 21; and oral argument, Feb. 28.

It was not known this week whether the hearing would be held before the Board itself, as originally announced, or whether an examiner would hear the case. But since the schedule of procedural steps made no mention of an examiner's report, it was thought the Board would hear the case in person.

Meanwhile, applications to intervene in the case were still coming in. One came from the Air Line Pilots Association, which said it should be allowed to intervene "in order to fully protect on its own behalf, and on behalf of its pilot members as individuals, its vested contractural rights with such other scheduled carriers" as may be the beneficiaries of any transfers of National's route certificates which might be made.

ALPA asked for the right to introduce evidence, call witnesses, cross-examine, file briefs and be heard on oral argument. It gave its endorsement to "a proper transfer of the National Airlines, Inc., authorizations with adequate provisions for the preservation of the rights of the pilots and copilots under existing collective labor agreements" with National. Such transfers, it held, "will rectify the obvious wrongs heretofore committed," and will "reduce to a minimum any possible fomentation of further and additional labor disturbances in air transport."

Colonial Airlines also sought to become a party to the case on the grounds that at one time or another it had been an applicant for most of the points involved and therefore has an interest in the routes proposed to be transferred. It said it saw in the NAL investigation a chance for the Board to improve Colonial's route structure, a condition it had sought to bring about through certification or consolidation, merger, transfer or interchange.

Capital-NAL Deal Favored

The proposed Capital Airlines-National Airlines Interchange Agreement, which was recommended for approval last month by CAB Examiner Edward T. Stodola, is attracting industry interest not only because of the Board's recently indicated emphasis on interchange but also because the financial arrangements between the two carriers were different from those of previous interchange proposals.

Stodola recommended approval of the interchange agreement for through service between points east of Pittsburgh only, and then only subject to these conditions:

(1) That operations under the agreement shall not begin until the dispute between National and the Air Line Pilots Association is settled;

(2) that if experience under the present agreement proves adverse to the public interest, CAB may require the carriers to work out a leasing basis different from that proposed;

(3) that the agreement may be cancelled without notice and hearing before a Board examiner;

(4) that if service other than that listed in proposed interchange schedules is to begin, the two airlines must give at least 15 days' notice to CAB and other interested parties.

Sharing Profit, Loss. The Capital-NAL agreement provides for a pooling and sharing of profits or losses of the interchange operation, whereas prior interchanges in general have provided for fixed rental charges for equipment in interchange use, with each carrier bearing the expenses and receiving the revenues on its own routes.

Cost and pooling arrangements are set up in considerable detail in the Capital-National agreement. Revenues derived from the proposed services, including mail revenues, are to be placed in a pooled fund, with deductions therefrom to be charged against the lessor and lessee of the interchange aircraft. These charges, in effect, will represent direct flying costs for the lessor and indirect costs for the lessee. Any balance in the pool after expenses are met is to be divided according to a formula giving 45% to lessor, 55% to lessee.

Flight crews are to be leased with each aircraft leased under the agreement, with Capital aircraft and crews working the interchange between Dec. 15 and May 15 and NAL taking over the following six months, an arrangement designed to increase each carrier's utilization during its off-season.

In calling for rejection of the part of the interchange which proposed through-plane service between Capital's Route 14 points west of Pittsburgh and NAL Route 31 points, Stodola claimed that

Air Transportation Day—More than 100,000 people visited Los Angeles Airport on Sunday, Nov. 14, for the first annual Air Transportation Day, sponsored jointly by the airport and the L. A. Junior Chamber of Commerce. In giving local citizens an open house opportunity to inspect the busy terminal, the event did much to advance public awareness of air transportation and of airport facilities and procedures.

Special sightseeing flights were offered by American Airlines, TWA, and Western Air Lines. More than 1500 persons were interested enough to take the scenic ride over L. A. at nominal sum of $2.50 each. Many more were turned away. American operated 14 half-hour rides in two DC-6's carrying total of 750 passengers. TWA provided 10 Constellation flights, handling 505, while Western's 6 DC-4 flights carried nearly 300.

Of special significance was fact that 90% of the passengers were first-timers, and 30% were children. So successful was the event that sightseeing flights hereafter will be a regular Sunday offering.

Airlines reported that as many as 10,000 people went through the transports on display. Guided tours of hangar and shop facilities proved to be another popular attraction. TWA and Western opened their maintenance and overhaul facilities and many thousands went through the installations where special exhibits were presented by the carriers.

shorter routings already exist for traffic between several major Route 14 points and the southeast.

Simple, Direct, Voluntary

The equipment interchange agreement whereby American Airlines and Delta Air Lines propose to provide a through one-plane transcontinental service between the southeast and the west coast has been filed formally with the Civil Aeronautics Board, and the carriers have stated that service can be inaugurated within a few weeks "if the application is given the expedited treatment it deserves."

"The issues raised are simple; the proposal direct; the agreement voluntary," the application stated. "Thus the Board should grant to this application the special priority of procedural treatment which it has in the past consistently given to voluntary interchange proposals."

It said the proposed interchange "presents no question of diversion from historical air carrier participation in the traffic between the cities involved and would accomplish through service without change in the present routes of the two carriers."

The agreement outlines procedures for interchanging equipment. It is planned to fly interchange planes with Delta crews east of Dallas and with American Airlines crews west of Dallas. Schedules are to be set by the two lines at a later date. Revenues are to be divided in the same way as revenues from connecting plane service operated over the same routes.

Challenger's Extension

Because conditions largely beyond its control made Challenger Airlines 15 months late in starting operations under its temporary feederline certificate, the carrier thought its three-year certificate should be extended so as to cover this period of delay. Last month, the Civil Aeronautics Board went along with this view and extended Challenger's certificate to Mar. 30, 1950. It originally was to have expired next Mar. 28.

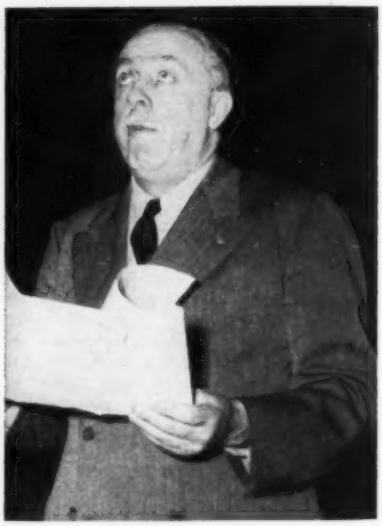
CAB pointed out that actual operations under more recently issued certificates would more nearly approximate three full years than would those under older temporary authorizations, since the latter took effect from date of the Board's decision.

LABOR

Ten-Termer

The 10th annual convention of the Air Line Pilots Association re-elected David L. Behncke to his 10th two-year term as president of the organization which he founded in 1930. Also elected to top offices in the ALPA were J. E. Wood of Eastern Air Lines to the post of first vice president; F. A. Spencer of American Airlines as secretary, and R. G. Strait of TWA as treasurer.

One of the major actions of the 152 delegates representing 29 airlines was to equalize voting rights of all classes of member irrespective of pilot classification. This will give the co-pilots a



David L. Behncke

ALPA's Perennial Choice

full vote as compared to ½ vote under the previous arrangement. This increase in voting power among this group may noticeably affect future policy of the association.

Ever safety conscious, 29 of the 161 resolutions acted upon during the week long session directly involved air safety. These included support for the revival of the independent Air Safety Board, going on record as favoring a single row of approach lights on the extension of the runway centerline, continued preference for ILS as a primary approach aid, and approval of the continuing activities of the ALPA in sponsoring air safety among the airlines of the world.

17 Regional V.P.'s. Seventeen regional vice presidents were elected to terms of two years: H. G. Portman, Region 1, UAL-Chicago; A. F. Foster, Region 2, TWA-New York; L. L. Caruthers, Region 3, Delta-Atlanta; W. T. Babbitt, Region 4, EAL-Miami; T. S. Bridges, Region 5, C&S-Caribbean; R. F. Render, Region 6, NWA-Eastern; P. C. Walters, Region 7, MCA-Kansas City; T. D. George, Region 8, Braniff-Dallas; E. A. Oliver, Region 9, Continental-Denver; R. E. Clark, Region 10, WAL-Salt Lake City; W. B. Wallace, Region 11, PAA-Seattle; R. W. Brady, Region 12, UAL-San Francisco; H. B. Cox, Region 13, AA-Burbank; H. G. Hoyt, Region 14, TWA-Cairo; W. L. Martin, Region 15, Panagra-Lima; W. R. Everts, Region 16, PAA-Brazil; S. L. Doepke, Region 17, PAA-Transatlantic.

More Pay for Hostesses

Hostesses serving with Continental Air Lines last month received an average wage increase of $35 per month with the signing of a basic employment agreement between the airline management and the Air Line Stewards and Stewardesses Association.

Other provisions in the contract include: extra pay for ground holding time; increased meal expense allowances, night taxi transportation at home bases, and free uniforms after a year's service. An important departure from many contracts is the introduction of a provision for breaking a system board deadlock in a dispute between the company and members of the ALSSA.

SPECIAL SERVICES

Routine Emergencies

The pattern was getting to be a familiar one: let surface transportation bog down because of a physical blockade, as in the case of Berlin, the need of a rush evacuation of personnel, as in Shanghai and Nanking, or a longshoremen's strike, as on the West Coast initially and then last month on the East Coast, and it was to air transport that fell the task of carrying the load.

Air transport's most recent emergency role stemmed from spread of the dock strike to New York and other East Coast ports in mid-November. On both sides of the Atlantic, passengers with bookings on the Queen Elizabeth, the S. S. America and other luxury liners rushed to airline ticket offices when ship sailings were suddenly canceled.

Shippers, particularly of perishable products, sent frantic SOS's to airline cargo departments, and as tens of thousands of pounds of first-class letter mail piled up on the docks in New York, the Post Office Dept. called on the three U. S. airlines operating across the Atlantic to fill unused space with this backlog of mail.

The airlines, as they had done in previous emergencies, responded in generous measure. American Overseas, TWA, and Pan American went to work on the accumulation of first-class mail at New York, though it added nothing to their revenues because of the arrangement whereby they are paid on a plane-mile rather than on a ton-mile basis for carriage of mail overseas.

For benefit of stranded steamship passengers, the three air carriers either increased the number of scheduled flights operated between the U. S. and Europe or operated extra sections of regular flights. They exchanged steamer tickets for air passage with scant formality. And they bent every effort to

handle emergency cargo and Christmas gifts destined for overseas points.

Meanwhile, on the West Coast, emergency and extra air lift to Alaska, Hawaii and the Orient was being provided by Northwest Airlines, Pan American, and United, among others.

Emergencies were getting to be routine with U. S. international air carriers.

Shanghai Evacuation

The rout of the Nationalist armies in China last month came about so quickly that emergency plans had to be formulated for the evacuation of U. S. businessmen and their families, missionaries and military personnel from the Shanghai and Nanking areas to Japan and from Japan to Hawaii and the States. As in the past, air transport stepped in to provide the needed lift.

State Department officials in China and occupation authorities in Japan called upon Pan American and Northwest Airlines to help carry out the evacuation, and both responded promptly.

PAA was asked to fly 1,000 American civilians out of the threatened areas in China, and to fly 400 of the refugees from Tokyo to Hawaii or the West Coast. Already operating seven flights weekly from the Orient to the U. S., Pan Am started at once to route every possible extra section to the Orient to aid in the evacuation.

Previously operating four flights weekly out of China on its Orient route, NWA a fortnight ago added an extra flight on Fridays and one each on Saturday and Sunday, bringing its total to seven a week. At the same time, Northwest mobilized its air crews and ground forces and its flight equipment for the emergency operation, recalling from furlough some 40 copilots who were qualified for the Orient route and readying additional DC-4's for possible use on the Shanghai run.

Flying the Great Circle route, NWA's evacuation flights come to Seattle-Tacoma and Minneapolis-St. Paul, and from these points domestic flights are available to carry the evacuees through to their destinations.

Making its relief service a two-way proposition, Northwest is loading its planes bound for the Orient with shipments of food, clothing and medical supplies that have been held up by reason of the West Coast shipping strike.

Military for Viking: Viking Airlines, large non-certificated passenger carrier, is now devoting most of its efforts to charter flights carrying personnel from southwestern military establishments to their homes on both the east and the west coasts, using a fleet of eight DC-3's. The line does not plan to discontinue its irregular $99 transcontinental service operated through New York travel agencies, since these flights can serve to keep the planes filled on the return leg of the special charters.

Rheinstrom Firm Dissolved

Alvin P. Adams and Associates, of Los Angeles and Washington, D. C., has acquired the interests of Charles A. Rheinstrom, Inc. of New York City, making the Adams firm one of the most comprehensive aviation consultant firms in the country. The transaction does not involve the transfer of personnel or work in progress, it was said.

The New York office of the Adams organization, headed by Alvin P. Adams, formerly president of Western Air Lines and a vice president of Fairchild Engine and Airplane Corp., will be located for the present at 41 East 50th Street.

Charles A. Rheinstrom, who resigned as vice president of American Airlines several years ago to enter the consultant field, will dissolve his firm to become senior vice president of Erwin Wasey & Co., well known New York advertising agency.

Expansion of the Adams firm by the acquisition of Rheinstrom interests establishes the concern in three of the most important centers in the country—New York, Los Angeles, and Washington, D. C.

Bargain In Connies

If CAB approves the deal, Trans World Airline will buy two Model 49 Constellations from Hughes Tool Co. at the bargain price of not more than $545,000. Both aircraft would be conversions from military types. Pending CAB action, TWA will use the two planes at no charge. The sales agreement provides for payments of not less than $9,000 monthly beginning with delivery of the planes, with payments pledged by a negotiable installment promissory note secured by a chattel mortgage on each aircraft. Interest is set at 2% per annum, payable monthly.

Because of the control relationship between TWA and Hughes Tool, all transactions between the two exceeding a certain minimum dollar amount must be approved by CAB.

Sea-Air Reorganization: The 11 steamship companies which created the Sea-Air Committee will meet in New York this month to outline future activities and choose officers and a new chairman. Since Tirey L. Ford returned to his private business in California, Robert Kline, Jr., of Washington, committee counsel, has directed its affairs. It is understood the committee will remain active in its fight to get clarifying legislation which would permit steamship companies to operate auxiliary aircraft services.

Kitty Hawk Returns: The Wright Brother's Kitty Hawk was returned to Washington on Nov. 22, after a 20-year absence spent at London's Museum of Science. The historic craft will be turned over to Smithsonian Institution on Dec. 17—the 45th anniversary of the Kitty Hawk flight.

CAB CALENDAR

Dec. 1—Oral argument in the Additional Service to Bethel and Nome Case. (Docket 865 et al.) 10 a. m., e.s.t., Room 5042, Commerce Building.

Dec. 6—Oral argument in the Additional California-Nevada Service Case. (Docket 2019 et al.) 10 a. m., e.s.t., Room 5042, Commerce Building.

Dec. 8—Hearing in Pan American Airways' Guatemala City—Los Angeles/San Francisco Extension Case. (Docket 3277). Los Angeles, Calif. Place and hour to be announced. Examiner Ralph L. Wiser.

Jan. 3—Hearing in Second New England States Case. (Docket 2196 et al.) Postponed from Nov. 29. Place and hour to be announced. Tentative. Examiner Edward T. Stodola.

Jan. 4—Hearing on route consolidation proposals of Transcontinental & Western Air. (Docket 2581 et al.) Tentative. Postponed from Dec. 13. Place and hour to be announced. Examiner Ferdinand D. Moran.

Jan. 17—Hearing in National Airlines Dismemberment Case. (Docket 3500). Tentative. Examiner not yet named.

Aviation Calendar

Dec. 1-2—AIA, Air Force-Navy-Industry (ATC) meeting on accessory oil seals, Washington, D. C.

Dec. 2-3—Fourth annual International Aviation Celebration, El Paso.

Dec. 2-5—Annual meeting, Society for Experimental Stress Analysis, Hotel Commodore, New York City.

Dec. 3—American Helicopter Society, Inc., annual dinner and presentation of honorary fellowships, Hotel New Yorker, New York City.

Dec. 4—Aircraft Industries Association annual meeting, Los Angeles.

Dec. 14-15—AIA, Air Force-Navy-Industry meeting on accessory drive requirements, Power Plant Lab., Wright-Patterson Air Force Base, Dayton, Ohio.

Dec. 17—Annual Wright Brothers Lecture, Institute of the Aeronautical Sciences, at U. S. Chamber of Commerce, Washington, D. C.

Jan. 5—Florida Flying Alligator Club 14th annual reunion, Melbourne, Fla.

Jan. 10-14—SAE Annual Meeting and Engineering Display, Hotel Book-Cadillac, Detroit.

Jan. 12-14—Conference of commercial aircraft spray operators, U. of Illinois, Urbana.

Jan. 13-14—Fourth NAS Council Meeting, AIA offices, Hollywood, Calif.

Jan. 24-27—IAS 17th Annual Meeting, Hotel Astor, New York City.

Jan. 27—SAE, Metropolitan Section, fuels and lubricants meeting, Engineering Societies Bldg., New York City.

Mar. 3—SAE, Metropolitan Section, air transport meeting, Engineering Societies Bldg., New York City.

Apr. 3-6—American Association of Airport Executives annual meeting, Oklahoma City.

Apr. 11-13—SAE National Aeronautic & Air Transport Meeting, Hotel New Yorker, N. Y.

July 3-4—Southern California International Air Races, Long Beach.

International

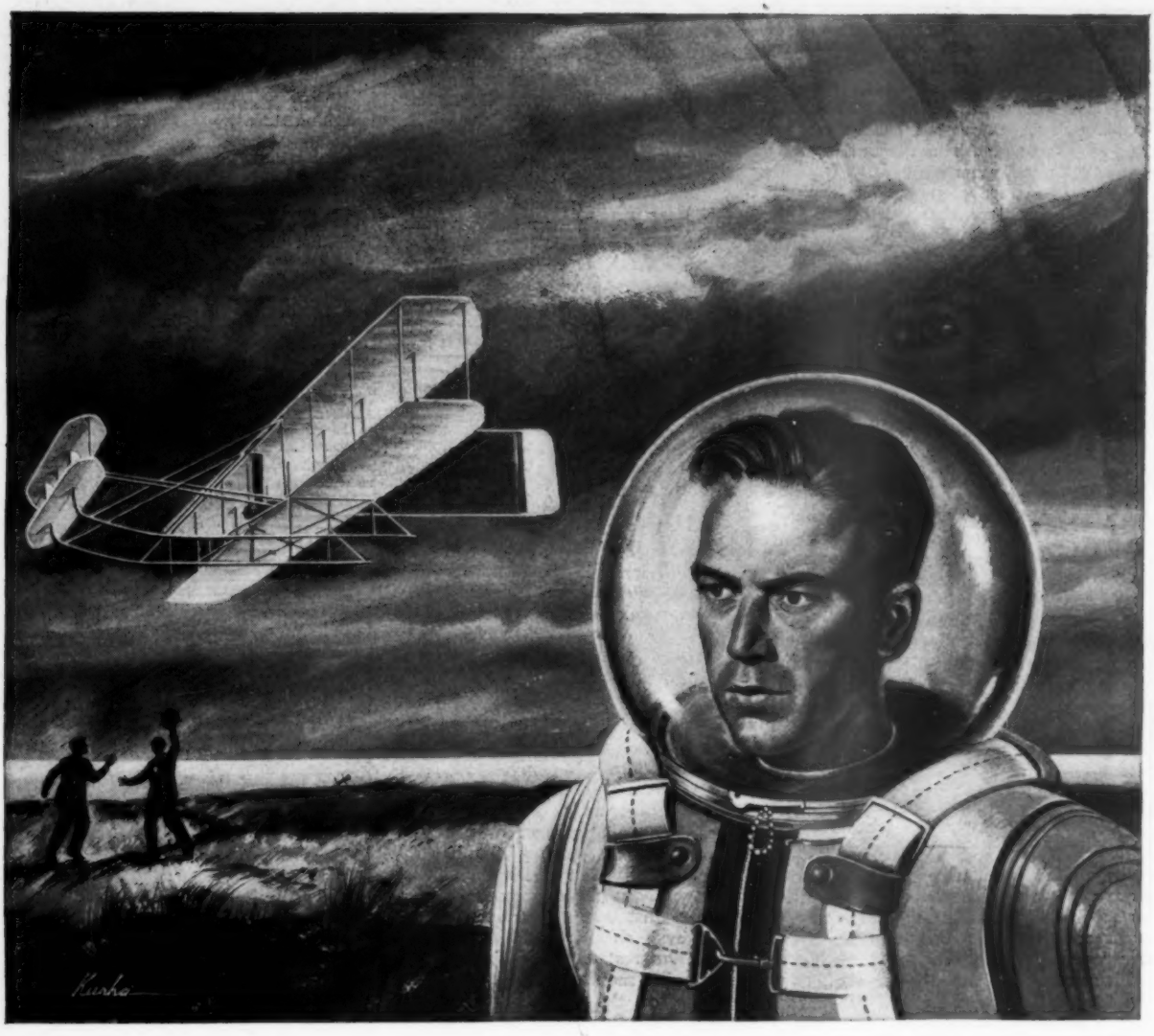
Jan. 11—ICAO Communications Division, Montreal.

Feb. 8—ICAO Operations Division, Montreal.

Feb. 22—ICAO Airworthiness Division, Montreal.

July 13—ICAO North Pacific Regional Air Navigation Meeting, Seattle.

Aug. 24—ICAO African-Indian Ocean Air Navigation Meeting, Algiers.



A dream came true in 1903

45 years ago... on a barren, windswept beach at Kitty Hawk, North Carolina, two young men were experimenting with an awkward-looking "flying machine." Their dream was to fly. Finally a telegram went out . . . *Made two flights today against 40 mile wind. Inform press. Home for Christmas. Love. Orville.* Their dream had come true. The Air Age was launched.

Today, aviation knows no limits. In doing honor to the Wright brothers on the 45th Anniversary of their Kitty Hawk flight, Curtiss-Wright also honors the ingenuity and productivity of American men and women of aviation . . . the far-seeing ones, the followers of Orville and Wilbur Wright and Glenn H. Curtiss, three great pioneers of heavier-than-air flying.

FIRST IN FLIGHT

CURTISS-WRIGHT

Airplane Division

COLUMBUS, OHIO

DEVELOPING FLIGHT TO MEET THE FUTURE

B-50—Quite an Airplane

As a guest of the U. S. Air Force and the Boeing Airplane Co., we had the honor of being one of the first ten civilians to ride in the new B-50 Superfortress last week. We flew in a brand new model, fresh from the production line, from Boeing's Seattle plant to Moses Lake Air Force Base, Washington.

Seated in the bombardier's compartment, which is located in the nose between the pilots' seats, we had an excellent opportunity to observe the instruments and judge the performance of the plane. We wish to state that the B-50 is quite an airplane.

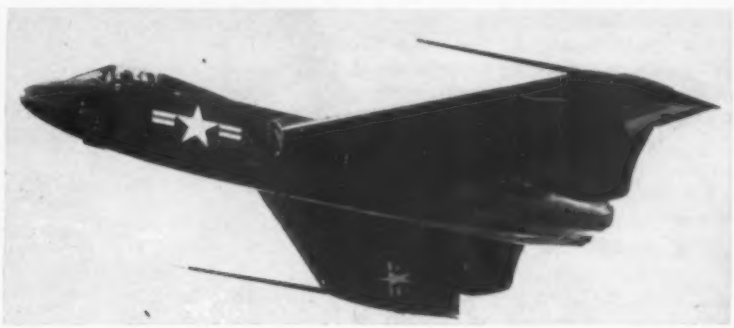
We were impressed right from the start of the trip when our pilot calmly announced that he would take off without flaps. Noting our raised eyebrows, he grinned and added, "This isn't a stunt. The plane has so power it just takes off by itself."

A couple of minutes later we found this to be exactly true. The 60-ton bomber, which is powered by four Pratt and Whitney R-4360 Wasp Major engines, each pulling 3500 hp on take-off, lifted off the ground about halfway down the runway, without flaps. By the time we reached the end of the runway our airspeed indicator showed a true airspeed of 205 mph.

The plane climbed to 7000 ft. without effort, indicating 220 to 230 mph throughout the climb. At 7000 ft. we were given a demonstration of its cruise performance. Pulling 35 inches of mercury and running at 2200 rpm, the B-50 cruised at an indicated speed of 250 mph, which at that altitude was 275 mph true air speed. (The B-50 is equipped with true air speed meters which automatically adjust for pressure altitude and temperature, eliminating the old navigator's "slipstick" method of computing true air speed.) Our pilots told us that at altitude, where the less-dense air provides greater true air speed, the B-50 can cruise at 350 mph without increasing the power. Since, on the missions for which the plane was designed, it would spend nearly all of its time at high altitudes, this latter speed figure is the significant one.

When we landed at Moses Lake, the pilot threw the Curtiss Electric propellers into reverse pitch. The B-50 slowed down to taxi speed before we had used a quarter of the 10,000 ft. runway.

The controls of the B-50 are easy to handle and as sensitive as those of a fighter plane, as our pilots demonstrated. One of the pilots, who has flown in every reciprocating-engine type except the Lockheed Constellation and the Douglas DC-6, said it is undoubtedly the best performing airplane he has ever flown. We were inclined to agree.



Tailless Jet—The Navy's latest jet fighter, the tailless Chance Vought F7U. Powered by two Westinghouse J-34 jet engines, the F7U is definitely the hottest plane in the Navy and compares in performance with the Air Force's F-86. Virtually a flying wing type, the F7U is controlled by a combined aileron-elevator system, known as "ailevators." The plane does not have the conventional landing flaps, so to slow it down for carrier landings it is equipped with leading-edge slots.

Stratojet Flies Like Fighter

At Moses Lake we got our first look at the six-jet Boeing B-47, which will soon go into production at Boeing's Wichita Division. Neither of the two experimental models was on flight status, since both are being readied for delivery to the Air Force. Delivery is only a formality, however, since Boeing will keep the planes at Moses Lake on bailment contract for further flight testing.

Boeing pilots Scott Osler and Jim Fraser, who have handled the B-47's during their initial test program, told us that the plane handles like a fighter. Osler confirmed the fact that the Stratojet had run away from a Lockheed F-80A jet fighter while conducting speed calibration tests. He said, however, that he doubted it could outrun the new North American F-86, holder of the world's speed record.

The No. 1 Stratojet has completed 80 flight hours and is scheduled to be turned over to the Air Force this week, with No. 2 following in about two weeks. Both planes have been flown at their design gross weight of 120,000 pounds.

Wing Tip Remover

You never suspect that a device to blow your wing tips off could be a safety gadget, but the ingenious Navy has come up with just such a process. At Alameda (Calif.) Naval Air Station, Navy maintenance personnel are busy installing such a system on Grumman F8F Bearcats.

It all started when it was discovered that an F8F wing tip could rip off during high speed dives with excessive pull-out acceleration. Minus one of its wing tips, the F8F rolls violently and can become uncontrollable. Shorn of both its wing tips, however, the plane, though crippled still has enough airfoil to make a safe landing.

So the Navy developed a synchronized wing tip jettisoning unit, which blows off the remaining wing tip when one is lost. Equipment for the system consists of an electrical circuit routed from one wing tip to the other through the fuselage. Jettisoning is accomplished by electrically energized blasting caps, which ignite a detonating cord. Thus, when one wing tip rips off, the electrical circuit simultaneously actuates the detonating mechanism on the other end.

Variable-Sweep Wing

At the National Advisory Committee for Aeronautics' Ames Laboratory at Moffett Field, Calif., NACA engineers are conducting wind tunnel experiments with a wing which may be the answer to one of the services' big aircraft design problems. The wing is a variable-sweep wing which can be adjusted to a desired angle of sweepback in flight, thereby permitting a straight wing for low speed stability on landings and take-offs and a swept-back wing for high speed flight. NACA estimates that the swept-back wing is most efficient at speeds between Mach .85 and 1.8 (roughly 650 to 1375 mph at sea level).

Ames laboratory is not concerned at present with an actual aircraft design, their experiments having been confined to studies of the effect of shock waves on various angles of sweepback. However, Smith J. DeFrance, director of Ames, stated that a number of manufacturers now have the aerodynamic know-how to design an adjustable wing plane. DeFrance said that the design is entirely practicable, the only problem being the devolpment of actuating mechanism which is light enough.

JAMES J. HAGGERTY, JR.

ADMINISTRATIVE

Leonard F. Bouman, managing director of KLM Royal Dutch Airlines' West Indies Division, has been granted an indefinite leave of absence to become U. S. representative of the Central Tourist Committee for the Netherlands West Indies in New York. With KLM since 1925, Bouman has been stationed in this country since 1941.

Robert B. Phillips has been promoted from general superintendent for Canadian Pacific Air Lines' western region to the new post of manager of western lines. He has been active in Canadian aviation for 14 years, having served with the Yukon Southern Co. before it was absorbed by CPAL in 1942.

OPERATIONS—MAINTENANCE

Frank A. Taylor has been appointed station manager for Northwest Airlines at Honolulu. He has been with NWA 13 years, serving recently as station manager at Billings, Mont.

John L. Gaiser, a 16-year maintenance employe with Trans World Airline and formerly superintendent of shop production control in the Kansas City overhaul base, has been transferred to New Castle as superintendent of production control.

J. D. Stuart, who has been in charge of international operations for National Airlines at Tampa airport, has been appointed foreign operations assistant to the NAL superintendent of stations.

George Eberting has been named chief of communications for United Air Lines in Seattle. He joined Boeing Air Transport in 1931 as radio operator, then held various positions in communications in other UAL cities before becoming chief of communications in Portland. **Everett Taylor,** former assistant chief of communications in Portland, replaces Eberting in that city. Taylor first worked for Varney Air Lines in 1930.

William Gentry, former chief of station operations for United Air Lines at Honolulu, has been named staff assistant to S. V. Hall, UAL manager of ground operations. He joined UAL in 1940 in San Diego and since has held positions in San Francisco and Los Angeles.

R. P. Ensign, director of in-flight service for Western Air Lines, has assumed duties of **R. H. Moebus,** formerly manager of food service, who resigned.

Robert L. Garrison, who joined Braniff Airways as a flight purser last spring, has been appointed passenger service representative in Lima, Peru, where he has lived the past seven years.

20 Years With PAA— Oliver J. Studeman (right), operations manager of the Latin American division of Pan American Airways, receives his PAA 20-year pin from Wilbur L. Morrison, v.p. in charge of Latin American division.

TRAFFIC & SALES

Frederick C. Henderson has been appointed regional agency manager for the Detroit area for Eastern Air Lines. He has served the past two years in EAL's international traffic department at La Guardia Airport. He has been with EAL for nine years.

Dick Jones, formerly in TWA's reservations department in Kansas City, has been advanced to assistant superintendent of reservations—domestic, replacing **Harold Shipman,** resigned.

E. Stuart Poole has been promoted to traffic and sales representative-in-charge for Eastern Air Lines in the Evansville, Ind., district.

Frederick C. Henderson
EAL Regional Agency Manager

John A. Campbell, formerly assistant to the director of traffic procedures for Eastern Air Lines, has been promoted to assistant traffic and sales manager for the New York area. He joined Eastern in 1941.

Robert C. Campbell has been appointed to the new position of west coast traffic representative of Braniff Airways, with headquarters in San Francisco. Manager of the air cargo division of Hawaiian Freight Forwarders Ltd. since last June, Campbell formerly was associated with United and Pan American Airways.

John E. Boisseau, until recently a service executive with the Newell-Emmett advertising agency, has been appointed assistant to the director of advertising for American Airlines.

William S. George, Jr., who joined Eastern Air Lines in 1939, has been named assistant traffic and sales manager at Houston. He was formerly assistant to the director of traffic procedures.

James W. Lockwood, who has been with Eastern Air Lines since 1943, serving recently in the Atlantic traffic department, has been appointed traffic and sales representative for Macon and Columbus, with headquarters in the latter city.

Robert Merchant a native of Cuba, has been choosen to work as traffic representative in close contact with PAA's Cuban affiliate, Compania Cubana de Aviacion, S. A. Merchant who has been with PAA since 1939, replaces **Rafael Ramirez,** who was transferred to the Rio de Janeiro office.

Arven Saunders, assistant to the regional manager of reservations and ticket office for American Airlines in Boston since last January, has been appointed a cargo sales representative in that city.

Henry Fredericks has been named regional air freight manager for Eastern Air Lines at Washington. He formerly was based at Newark.

Adolph A. Hoehling, formerly in charge of magazine publicity for United Air Lines in its Chicago offices, has been named publicity representative in Denver.

Maurice Westphal has been appointed traffic and sales manager for Eastern Air Lines in Cleveland and neighboring territory. He joined the company in 1945.

* * *

James G. Ray, former v.p. of Southwest Airways and a pioneer in the aviation field, has opened an office at 811 Arlington Building, 1025 Vermont Ave., N.W., Washington, 5, D. C., as an aviation consultant. Ray's work largely will be with reference to needs of feeder airlines.

Ralph V. Hunt, veteran aircraft executive and a prominent figure in New York

and California financial circles, has resigned as vice president-comptroller of the Douglas Aircraft Co. and as a director of the company. He made no statement of his plans for the immediate future. He had been with Douglas since 1940 and had served several times as chairman of the accounting committee of the Aircraft Industries Association. **Harry W. Strangman,** assistant treasurer, was named treasurer of the company and elected to the directorship vacated by Hunt. **H. P. Grube,** now in semi-retirement, was elected to the post of assistant treasurer.

Matthew M. Gouger has resigned, effective Dec. 31, as v.p.-personnel and public relations and as a board member of The Glenn L. Martin Co. No successor has been named.

Albert F. Grisard, who has been serving as public counsel in the certificates and permits section of CAB's Bureau of Law, has been appointed confidential assistant to CAB Vice Chairman Oswald Ryan. He replaces **Neil G. Malone,** resigned.

John Geisse, special consultant to the Civil Aeronautics Administrator, has been relieved of his duties. Geisse, who was working for CAA on part time basis, was active in many programs for improvements in personal plane field and is credited with several of CAA's experimental projects for increasing safety and utility. One of his more important contributions involved development of the castered (cross-wind) landing gear.

ADMA Elects Officers

Delegates to the sixth annual meeting of the Aviation Distributors and Manufacturers Association in Cleveland last month elected Richard N. Bomberger, vice president and director of sales of Sensenich Corp., Lancaster, Pa. as president; G. B. Van Dusen, Van Dusen Aircraft Co., and R. W. Richardson, The Goodyear Tire and Rubber Co. as vice presidents.

Dr. Compton Joins NACA

Dr. Karl Taylor Compton, president of Massachusetts Institute of Technology since 1930, has been sworn in as a member of the National Advisory Committee for Aeronautics. As head of the Research and Development Board, his appointment as a member of NACA was automatic. Dr. Compton succeeds Dr. Vannevar Bush as head of the RDB and member of NACA.

Wright Lecture: The 12th Wright Brothers Lecture will be delivered this year by Abe Silverstein, chief, Wind Tunnel and Flight Division, Lewis Flight Propulsion Laboratory, NACA on the subject "Research on Aircraft Propulsion Systems." The lecture will be delivered Dec. 17 at 3 p.m. in the U. S. Chamber of Commerce auditorium, Washington, D. C.

Airline Commentary

By ERIC BRAMLEY

WE note that TWA annual passholders are to keep an eye on passenger service while traveling around on their airline . . . They are to fill out a questionnaire giving their opinions on various phases of passenger service . . . We don't know how many other airlines are doing this, but it's an excellent idea . . . We had advocated it a couple of years ago in a speech before some of the airline passenger service directors, with the thought that airline employes ought to be well qualified to judge service standards . . . An objection we ran into was that a man working for one department of the airline would, if he found anything wrong, be criticizing another department, and that this would lead to hard feelings . . . This objection, in our mind, is just so much eyewash, and anyone who is that sensitive shouldn't be in the airline business . . . We'd like to see all airlines adopt the practice . . . Incidentally, one way to make sure that passholders turn in the questionnaire would be to make a rule that they must be attached to expense accounts . . .

•

Continental Air Lines is getting ready to start service with Convair Liners on Dec. 15, so the company has coined a new word which it is using in a slogan . . . The word is "CONVAIRsation" . . . The slogan says, "Let's start the CONVAIRsation; service begins Dec. 15" . . . Should be eye-catching . . . Stan Halberg, CAL's general traffic and sales manager, paid us a visit recently, and he was showing us a new company timetable which had pictures of eight of CAL's station managers in it . . . The company plans to run pictures of its other station managers as new timetables come out . . . Station managers are deserving of such recognition . . .

•

Bob Burgess, the Deputy Second Assistant Postmaster General, had promised to alert us when some unusual shipments traveled via the new domestic air parcel post service, so we could report them to you . . . He called us the other day . . .

"Say, I've got one for you," he said. "Here's a shoe company in Massachusetts that shipped 5,590 pounds of shoes to dealers in the St. Louis area."

"Well," we kidded him, "that's not so unusual. Anybody shipping any shmoos, or a planeload of feather dusters, or anything like that there?"

"Whadayamean it isn't unusual?" he demanded. "That little deal rang the Post Office's cash register to the tune of $1,879.50, and that ain't hay. TWA carried the shipment—4,000-odd pounds on a cargo plane and the rest on a passenger flight. Seems like this shoe manufacturer wants to test the feasibility of using air service to get new shoe models into dealers' hands fast. So he sent two pairs of shoes to each of 900 dealers around St. Louis."

"That's 1,800 pairs of shoes," we retorted, "and the bill was $1,879.50. That's over a buck a pair. Little expensive, isn't it?"

"Not if the manufacturer can get new models to dealers **fast, and get** orders back faster still," he said.

"Well, maybe so," we admitted. "But have you got anything really unusual?"

"Okay, how's about this one," says Burgess, a very even-tempered guy. "A manufacturer in New Jersey just shipped 1,000 lbs. of milk bottle caps to a dairy in Arlington, Va."

"So what?" we replied, still kidding.

"So what?" he said, surprised-like. "Did you ever stop to think how many milk bottle caps there would be in 1,000 lbs.? That'll take care of a lot of cows. And all because of our fast, efficient parcel post service."

"Okay, okay," we said. "But call us when you have something *really* unusual. Then we'll put it in the paper. Like when somebody ships 5,000 lbs. of putty. We still like the shmoo idea, though. We'd like to ride with the first shipment. Anyway, call again."

(Think he will?)

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Bits from hither and yon: Have you seen Eastern Air Lines' booklet entitled "How to Rate Yourself as an Airline Pilot?" . . . It's devised to give EAL pilots and co-pilots a means of evaluating themselves and comparing their efficiency with that of their fellow flight personnel . . . It's a real novel approach . . . EAL Capt. M. A. C. Johnson gets most of the credit for compiling it . . . Clark Kee, who was once with American Arlines and who knows a lot of of people in aviation, is now in Bangkok, Siam, with Far East Airport and Airway Co. . . . He says a lot of people from the U. S. go through Bangkok but haven't looked him up because they didn't know he was there . . . So he wants us to tell you where he is, because "out here a man appreciates seeing someone he knows" . . .

HOW to maintain CONSTANT CABLE TENSION in your aircraft!

- *under all conditions and altitudes of flight*
- *under temperatures ranging from −65° to 160° F*

[*This we believe is important information for all aircraft manufacturers and engineers*]

STURGESS CABLE TENSION REGULATORS

While some means of maintaining a constant tension in aircraft control cables has long been sought, the need for such a device has become urgent with the advent of faster, higher ceiling, and larger type aircraft which magnify the adverse effects of temperature variation, structure deflections, and control system friction.

Sturgess Cable Tension Regulators are the result of nine years of development and test work in which aircraft manufacturers and the air forces have given splendid co-operation. They are light weight, self-contained mechanical units—non-hydraulic, non-electric. The simple locking mechanism, being integrally inter-connected to both sides of the cable system, prevents any phase displacement between the driven and driving ends of the control system.

Sturgess Regulators are designed and constructed to give a wearing life to all parts, greater than the longest major overhaul period of any airplane. They are tested under every condition of use, in temperatures from over 160° F. to under −65° F., and have been delivering trouble-free service on airline and military planes for many years.

THE REGULATING PROBLEM:

When first approached nine years ago, the regulating problem was considered only to be the simple problem of compensating for the effect of change of temperature upon the skin of the airframe as compared with the effect upon the steel control cables. While this is still a major compensating requirement, heavier wing loadings on high speed aircraft, pressurized cabins, and heating systems have brought other factors to a magnitude requiring major consideration.

THERMAL FACTORS which require compensation are:

(a) Differences in expansion of cable and airframe over the full range of outside temperatures.

(b) Temperature lag of the cables in following the change in airframe temperature, under a rapid temperature change of the outside air.

(c) The effect of cabin heating or adjacent heating ducts causing cable temperatures to be higher than airframe temperatures. This is particularly important where insulation separates the airframe from the cables.

MECHANICAL FACTORS which militate against constant control cable tension are:

(a) Flexure of aircraft structure when cable run does not coincide with neutral axis of surrounding airframe.

(b) Distortion of aircraft structure caused by weight and placement of cargo, pressure cabins, etc.

(c) Wear in pulleys and cable.

(d) Permanent deflection in parts of control system due to wear and overstress.

Properly designed and installed Cable Tension Regulators assure constant ease of control and INSTANT RIGID RESPONSE to pilot action by maintaining within close limits, the ORIGINAL RIG LOAD, and CONSEQUENTLY FRICTION, of the control system.

IMPROVE SAFETY in FLIGHT

Uniform cable tension and therefore relatively constant friction in a control system cannot be over-emphasized, for changes in control system friction can completely mask the stick forces and thereby cause severe differences in pilot sensitivity. This applies equally well to systems with or without power boost.

Sturgess Cable Tension Regulators OFFER THE FOLLOWING DEFINITE ADVANTAGES in the handling of aircraft:

(1) They greatly IMPROVE THE STABILITY AND FLYING CHARACTERISTICS of the airplane for the following reasons:

(a) They prevent slack cables and erratic control under conditions of extreme cold.

(b) They prevent increased tension and friction in cables under conditions of high temperature.

(c) They prevent over-taut and over-loose cables under conditions of structure distortion caused by heavy loads, concentrated cargo placement, pressure cabins, etc.

(d) They make possible the use of greatly reduced rigged tensions, with consequent increased ease of handling. Low friction characteristics increase pilot feel and allow for an increase in aerodynamic balance of control surface if desired.

(e) Uniform tension and friction under all conditions of flight are particularly important in high speed flight.

SAVE MAINTENANCE and INSPECTION TIME

(2) They greatly REDUCE SERVICE REQUIREMENTS on control systems because:

(a) They ELIMINATE the necessity of cable tension adjustments for different areas of operation, or climatic conditions.

(b) They decrease pulley, pin and cable wear and increase their life.

(c) They permit rigging of cables at any hour of day or night under any temperature conditions, with assurance that tensions will remain as rigged.

GENERAL PRINCIPLE OF CONSTRUCTION AND OPERATION OF REGULATOR

Sturgess Cable Tension Regulators are designed for interconnection between the two sides of a cable system and their operation is governed by the relative or differential tension between the two cables.

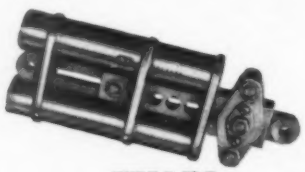
Essentially the regulators consist of (A) one or more compression springs introducing a tension equal to the desired rig load of the cable system and, (B) a locking mechanism which allows the springs to exert their force in the system only when the cable system is in neutral, i.e., tension on the two cables is equal. When the control column is in a neutral position where the tension on each cable of a control system is the same, the tension regulator spring is effective on the system and maintains the original rigged load on the cables, compensating for any changes that may have occurred due to temperature, cable stretch or other mechanical variation that might occur in the system. But as soon as any control load is applied in either direction by the pilot or control surface, the regulator locks and gives the pilot rigid control. EACH TIME, HOWEVER, THE CONTROL COLUMN PASSES THROUGH THE NEUTRAL POSITION THE RIGGED LOAD IS RESET, NO MATTER HOW RAPIDLY THIS ACTION MAY TAKE PLACE. The entire mechanism is simple, devoid of valves, packing glands, and similar points of possible trouble.

TYPES OF REGULATORS

Sturgess Cable Tension Regulators are manufactured in two general types.

(1) Standard units, designed for installation on existing control quadrants, sectors or drums, or which can be mounted on stationary structure to move pulleys over which the cables run. Included in this type is the R-72-B Regulator.

(2) Built In Regulators, a more recent development, in which the regulating mechanism is designed as an integral part of a quadrant, sector, or drum, mounting at either end of the control system. Shown, as one example, is R-80.



TYPE R-72-B

Incorporates two telescopic tubes for rig load springs mounted one on each side of main frame brake leaf assembly. This affords a flat design for easy installation in confined areas.

MODEL R-80 QUADRANT

This model is ideal for large transport or bomber planes, providing regulation as an integral part of the quadrant structure.

MAY WE HELP YOU?

The Pacific Scientific Company engineering group will welcome the opportunity to co-operate in designing Built In Regulator units to customer requirements. Please send complete control system details including:

(1) Control system layout drawings.

(2) Size and type of terminal unit. (Layout drawings when available.)

(3) Envelope or clearance dimensions.

(4) Cable size and rig load.

(5) Compensation travel required.

A Built In Regulator unit can be designed to replace almost any standard quadrant, sector or drum type terminal unit already used, without requiring any structural changes in the aircraft.

Why not write TODAY?

Pacific SCIENTIFIC CO.

1430 Grande Vista Ave., Los Angeles 23, Calif.
Phone ANgelus 2-1123

25 Stillman Street, San Francisco 7, California
Phone DOuglas 2-0934

Slope Line Design Favored For Airport Approach Lights

By William D. Perreault

Within the next two weeks, possibly within a few days, the Munitions Board will act upon recommendations of the Army, Navy, Civil committee as to a standard approach light configuration for the United States. Although testing of existing and proposed configurations and of additional light units will continue indefinitely, it is important that some standard be adopted now to guide necessary installations in the U. S.

Unless an operationally proved standard is adopted soon, the U. S. will also be handicapped in ICAO meetings where international standards will be acted upon in the coming year.

Although it will be necessary that any standard be proved operationally to warrant consideration as an international standard, there are other important requisites which must also be studied. As with the adoption of navigational aids, other countries are unlikely to agree to the financial outlays which some of the systems under consideration would require.

Further, certain of the configurations tested at Arcata, the landing aids experiment station, will only be effective if used with the lights of a given power and these in turn are only produced by isolated manufacturers. It seems doubtful that an international standard based on such restrictive characteristics will be acceptable.

These limitations combined with the stringent operational requirements of any system make it highly probable that CAA's slope line system of approach lights will have found its way into the airport lighting evaluation committee's recommendations. At first glance it would appear that the slope line system is a type of lighting rather than a configuration; however, closer scrutiny indicates that the slope line is both a type and configuration. It is largely dependent for effectiveness on a dual row of lights arranged in predetermined positions.

CAA Development. Unlike the majority of lights tested at Arcata, the slope line light is not a commercial venture of a lighting manufacturer. It is the personal development of Cory Pearson, one of CAA's airport lighting chiefs, and the late A. J. Sweet, and there appears to be no reason why any of the manufacturers will not be allowed to produce the system as tested or some variation of the system as experience dictates.

The only apparent objection to the slope line system is the stand taken by the Air Line Pilots Association in favor of a single line extending parallel and on the center line of the runway extension. At its annual convention in Chicago two weeks ago, ALPA adopted a resolution going on record in favor of the center line configuration. There is a possibility of the pilot confusing left and right rows of the slope line system as presently in use but this can be corrected in future installations.

CAA is withholding action on assignment of contracts for some $2,000,000, pending acceptance of a standard system. This is the remainder of a budget award of $2,730,000 for the fiscal year 1949.

Unanimous Approval

As this issue was going to press it was learned that CAA's slope line approach light design had received unanimous approval of the 12-man Army, Navy, Civil committee. CAA estimated unit cost at $40,000 per airport, complete, and was planning to initiate bids for 12 sets on receipt of Munitions Board approval. Such approval seemed assured because of overlapping of ANC and Munitions Board membership.

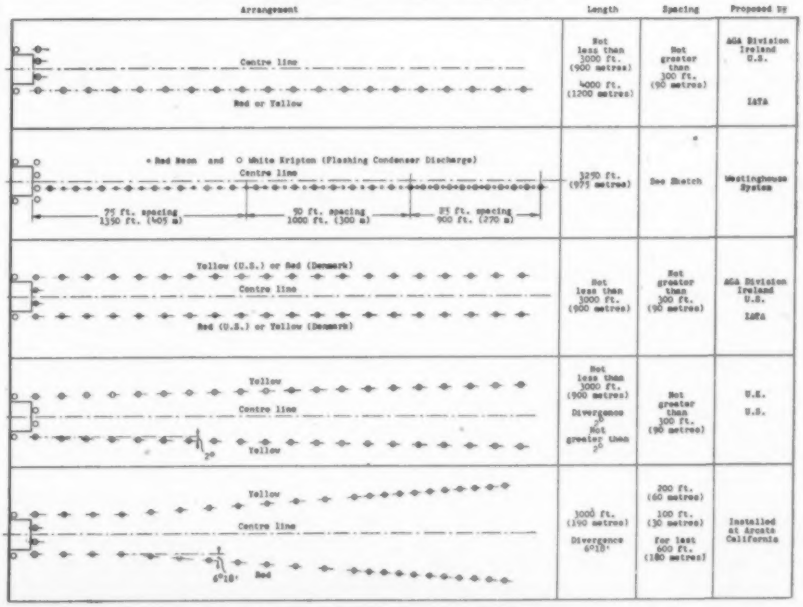
Following the adoption of a "standard" a year ago, CAA contracted for two sets of approach lights with American Gas Accumulator Co. These lights are to be installed at Washington National Airport and at Los Angeles Municipal Airport, in accordance with the standard which previous experience had dictated as desirable. The systems have not been installed as yet due to production time required and now CAA has loaned 40 of the 61 units on order to the USAF for installation at Templhof Airdrome to aid in the Berlin airlift.

Meanwhile the standard is due for change and when the system is installed it will probably be an obsolete system in comparison with the standard. This is not a reflection on the lights involved but if they are at variance to the adopted standard they will not fit the ultimate goal.

Standard Problem. Discussion has been raised as to the advisability of installing the lights which have been ordered and not yet installed if the new recommendations are at variance with the original standard. The fact remains that true standardization even on future installations is unlikely.

This is emphasized by the problem at Washington National Airport. The standard adopted last year called for a single row of red lights on the left side of the runway extending out 3000 feet from the runway threshhold at civil airports. At military airports a single line of yellow lights in the same configuration but on the right of the runway would be installed. Ultimately both lines would be in use in many

Some Existing and Suggested Arrangements for Approach Lighting Systems



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WASHINGTON, D.C.

locations around the country.

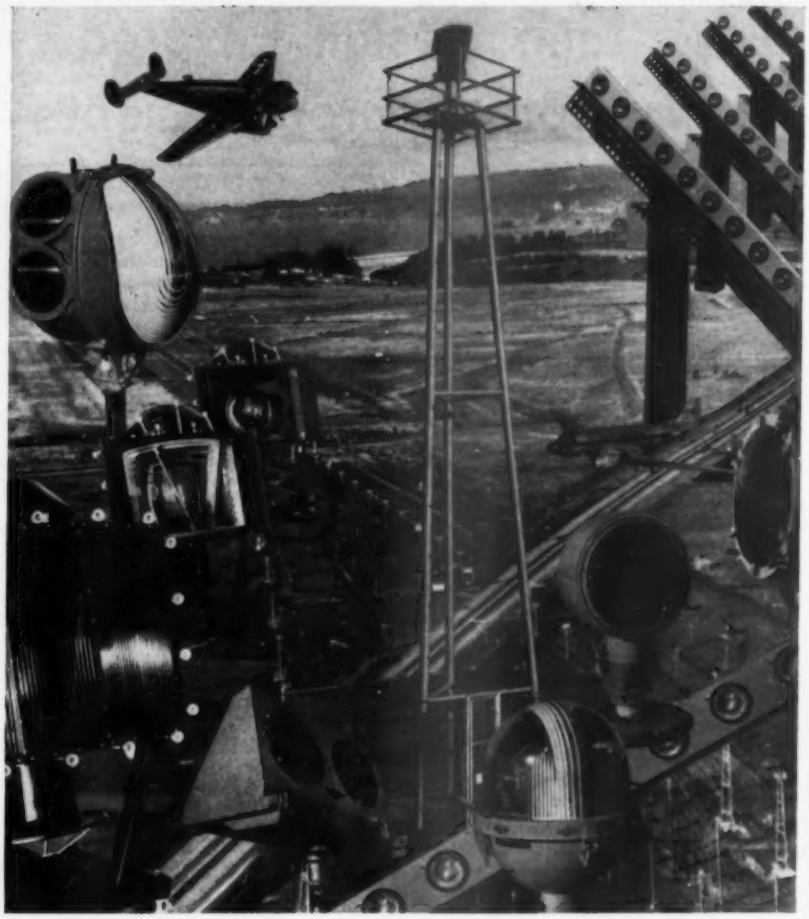
In planning the installation of the left row at Washington it was realized that the lights would extend into the Potomac River and it would be necessary to make certain compromises on the installation to enable use of the full row. It would be impossible to install the right row without obstructing the navigation on the river by extension into the boat channel. Since the initial advantage of a system such as the slope line calls for dual rows it is doubtful, but not impossible, that it could be used at Washington. These problems are repeated in various degrees throughout the country with any system.

A true picture of the success or failure of any system must depend on a basic understanding of what is expected of the lights. It is generally conceded that the prime need of such a system is in providing directional guidance to the pilot from the time that he reaches the portal until he lands. The portal is the area over the middle marker of the instrument landing system some 3500 feet from the runway threshold. In effect it is an area 300 feet on each side of the localizer centerline and 100 feet below and 300 feet above the glide path.

Altitude & Attitude. When the pilot of an approaching airplane reaches this point he should be able to see the approach lights, distinguish them from miscellaneous lighting in the area, realize which is the left and which the right row of lights, even though he might only see one row and recognize (in some systems) if his altitude and attitude are correct. The altitude and attitude requirements are stressed by the British systems more than those of U. S. Many people feel that this latter characteristic is amply provided for in electronic aids.

In general, the approach light systems are based on a row 3,000 feet long and this would place the last light approximately 500 feet from the middle marker. In addition to penetrating any fog, smoke, haze or other interferences with vision in this 500 feet area, sufficient lights in the row would have to be visible to permit directional guidance. Since several systems feature lights spaced 300 feet apart, this might require an additional 600 feet of vision over the 500 mentioned above.

To accomplish this penetration the new approach lights use some 100,000 to 150,000 watts of power providing as high as 3,300,000,000 candlepower. This compares with a power requirement of approximately 2,000 watts on the systems presently in use as a necessary component of ILS at the majority of commercial airports. Several of the lights tested at Arcata have proved acceptable with near zero-zero ceilings and visibility from 1/16 to ¼ of a mile. This is one of the factors which make it entirely likely that choice of a final system is more flexible than had once been anticipated.



Lights, Lights, Everywhere— This composite picture shows eight types of runway and approach lights used at Arcata Landing Aids Experiment Station. Reading from 11 o'clock and counterclockwise: approach light by Line Material Co.; three views of the American Gas Accumulator Co. approach light, with no lens, with inner lens only and with the vertical plastic lens attached; a Line Material Co. multi-row approach light; a Bartow high intensity runway marker light (with glass dome); an AGA high intensity runway marker; a Crouse Hinds Co. centerline approach light; and the slope line approach lights developed by the CAA. The light on the structure in the center is an AGA approach light. In the background is the approach end of the instrument runway at Arcata. Westinghouse approach lights which are now under test at this station were not installed at the time of this photograph.

Misuse of Lights. Participants in the Arcata tests have been led to believe that the pilots have not been using the existing approach lights for the purpose for which they are intended. This is a direct reflection on the ability of the 15-year-old neon light system in use to do the job. General thought is that they are used in the same manner as miscellaneous lighting in the area to locate relative position.

For this reason members of the ANC committee feel that training will play an important part in application of the approach lights in the same manner in which it is a prime factor in lowering limits with ILS. It is a fact that CAA at many airports has authorized lower limits than it will grant to individual carriers until such time as their crews receive additional training in its use.

All of the test work at Arcata has been photographed on colored film with moving picture cameras from within the airplane and these movies should prove a valuable asset in training crews to use the standard system. The very nature of the problem makes it quite possible to use films to accomplish pilot familiarization with aids rather than in actual flight. This should expedite maximum use of the facilities.

Whatever standard is adopted, Arcata will continue to serve a vital role in improving instrument flight procedures using the approach lights and in in-

vestigating new possibilities. Typical of this spirit is the plan to send an airplane and crew to England in the near future to run operational tests on Calvert's system of approach lights which the British favor so highly. Meanwhile it is significant that the ANC committee has been able to agree on a standard which should aid the airlines in their continuing struggle for schedule reliability.

AIRCRAFT DESIGN

AFA's Ideal Cargo Plane

Last week the Air Freight Association, representing non-certificated all-cargo carriers with annual traffic of over 100 million ton-miles, disclosed what these operators think is needed in the way of an airplane specifically designed for the movement of cargo and equally useful in military or commercial operations.

Essentially, the air freight carriers want a transport aircraft with low-cost operating potentialities—a direct flying cost of approximately 4c per ton mile.

Initial aim is to establish the desired characteristics of a trunkline freight plane with a payload capacity of 25,000 to 35,000 pounds for use in medium-range domestic operations; that is, coast to coast with one intermediate stop.

The Air Freight Association specifications deal primarily with an air freight plane to be designed and built in the future. The specifications are necessarily general and final "specs" would be written only after complete research and investigation.

Three general requirements are set forth: (1) The airplane should be of multi-engine, all-metal, tricycle landing gear type with a floor height suitable for flexible commercial and military freight operations, and with some consideration given to a low level, truck bed height floor; (2) it shall conform to all Civil Air Regulations applicable to air freight operations; (3) crew of two pilots shall be provided for, with crew compartment directly accessible from the ground.

Performance. The "specs" call for an operational range of 2,000 statute miles with maximum payload at 20,000 ft. standard altitude, at engine manufacturer's recommended cruise power.

Cruising speed would be 400 mph at average weight for 2,000 miles operational range at maximum payload. This could be reduced for economic reasons, the AFA said, but consideration should be given to cost savings of faster speeds, thereby creating an economy rather than a luxury. Service ceiling would be 16,000 ft. with one engine inoperative, its propeller feathered, and remaining engines operating at normal rated power at take-off gross weight.

Take-off distance at sea level, with emergency condition CAR's applicable, would be 5,000 ft. over a 50-foot obstacle.

Flight provisions listed in the "specs" include requirements that the landing gear be designed so it can be converted to one usable on an airstrip without surface runways. Assumption is that AFA has in mind the use of a tractor-tread landing gear of the type currently being tested on the Fairchild C-82 troop carrier. Other provisions include:

A crew compartment pressurized for an equivalent of 8000 ft. altitude at an airplane altitude of 20,000 feet; ice-elimination equipment of the thermal type or equivalent; and fuel tank capacity sufficient for a flight of 4,000 miles.

Capacity Provisions. Payload for operational range, as stated earlier, shall be between 25,000 and 35,000 pounds. Limiting dimensions of the freight carrying space should be height of 7-9 feet and arranged in one basic compartment. Compartment size should be based upon 6.5 lbs. per effective cubic foot of space available, with no aisle. This space should not be reduced below the size of a compartment base of 8.0 lbs. per effective cubic ft. En route on and off loading without necessity of shifting cargo is emphasized.

Major emphasis in the "specs" is given to provisions pertaining to the loading unloading, stowage and care of freight. These include: (1) Loading doors wide enough to allow two-way movement of personnel and at least as wide as the rear doors of a highway trailer (approx. 8 ft.); (2) minimum of two loading doors on one side of the plane, and possibly a third on the opposite side; (3) minimum height for all doors of 6 ft. 6 inches; (4) straight-away loading provisions if possible, without an excessive weight penalty or performance loss.

Floor Structure. The floor structure of the all-freight plane should be designed, AFA said, to a loading of 200 pounds per sq. ft.; be level, water-tight, and include a minimum height of 12 inches on the sidewalls to facilitate rapid cleaning.

Tie-down fitting provisions should be generously provided on both the floor and walls with provisions made to tie down a 10,000-lb. object. A readily removable and replaceable wearing surface should be used over the floor, and sidewalls of compartment should be smooth and free from discontinuities.

Pressurization should be provided for the freight compartment only after a complete study has been made to determine the need for pressurization of tight-skin fruits or vegetables, livestock and live poultry. Air conditioning equipment and insulation capable of maintaining the proper requirements for transportation of all types of perishable air freight shall be used and an air circulating system which will give uniform cabin temperatures. Refrigeration equipment, if provided, shall be packaged and quickly removable.

Maintenance Provisions. The Association said design of the freight plane should feature ease of maintenance under airline operating conditions and should include "power egg" quick engine change provisions, easy inspection, replacement and accessibility to controls, accessories, hydraulic system and electrical equipment.

Under the heading of economic considerations, AFA said "the highest possible degree of direct operating economy and reduction of indirect operating expenses shall be the prime consideration in the basic design of this freight plane."

The indirect operating ground handling expenses which do not enter into

Elevator & Work Stand—Edward Zimmerman, a foreman at Hamilton Standard Propellers, division of United Aircraft Corp., designed the apparatus shown above which was adapted to a Krane-Kar used for other purposes around the plant. It provides an adjustable work platform which can be used simultaneously for positioning the propeller during installation and removal. The platform can be hoisted by the trucks boom to any height up to 26 feet.

passenger aircraft design and should be considered, it said, are the number of freight handling and airplane service personnel required, reduction of ground damage to aircraft resulting from movement of surface vehicles, and the capital investment requirements for ground handling facilities.

All of which boils down to what the the Association calls "low overall operating cost," and which AFA says any plane designed specifically for air freight operations must have.

The suggested specifications, according to L. H. Brittin, executive director of AFA, are based on actual operating experience of the all-freight airlines, notably Slick Airways. They have been furnished to members of Congress and officials of government agencies likely to participate in any action which might be taken with regard to proposals for legislation providing government aid in the development and construction of prototype transport aircraft.

Tadpole Wing

Scheduled for early flight test in Australia is a wing of new design which the engineers have labeled the "tadpole" wing. Developed by the Australian Council for Scientific and Industrial Research in association with engineers of the government aircraft construction plant at Fisherman's Bend, near Melbourne, the wing incorporates the feature of boundary layer control by use of suction. Designed to fit a standard DeHavilland DH.G2 six-passenger glider, the new wing will be used in conjunction with a suction plant enclosed in the fuselage.

The suction plant uses a Ford V-8 engine to drive a centrifugal fan. Suction slots located at a point where the laminar flow of passing air over the wing would normally break away from the wing will draw the air inside the wing eliminating the breaking effect and this air will then be discharged overboard through a mechanism designed to provide thrust. The designers feel that the principle is particularly adaptable to flying wings.

Bristol 10-Place Helicopter

Work is now being initiated on a prototype of a 10-place, twin rotor helicopter on which the Bristol Aeroplane Co. has already completed a mock-up. This twin-engined rotorcraft uses many of the parts of the Bristol 3-4 seat helicopter and this has reduced development time considerably enabling an estimate early summer for the first flight.

Powered by Alvis Loenides engines, this ship features an interconnecting shaft which may be used in emergencies to drive both rotors. It is one of the first aircraft being built to comply with the latest airworthiness requirements prepared by the Air Registration Board.

NAVIGATION

ANDB Charter Okayed

The charter of the Air Navigation and Development Board, signed recently by Defense Secretary Forrestal and Commerce Secretary Charles Sawyer, contains provisions to prevent any agency within the National Military Establishment or the Dept. of Commerce from engaging in air navigation and/or air traffic control research and development projects without approval of the ANDB.

It also limits the activities of the ANDB by providing that the Board shall not operate any laboratories or pilot plants but shall use the facilities of other governmental agencies, universities and commercial organizations for research and development work.

Concurrence of all members of the Board, except the chairman, will be required before any matter is put into effect. The charter provides for matters not settled within the board going to the CAA Administrator and if his decision is not acceptable to any of the Board, exclusive of the chairman, the matter may be brought to the attention of the Secretaries of Commerce and Defense for joint determination.

NWA Tests Periscope

By combining the characteristics of the periscope with the navigational sextant, a new instrument now in use by North-

west Airlines simplifies the work of the navigator. The first unit has now had three months' service in a DC-4 airplane where it is mounted in a porthole in the cabin. In this position it can be rotated through a full 360 degrees of the horizon and elevated from minus 10 degrees to plus 92 degrees.

In addition to eliminating the optical errors caused by sighting through the astrodome or windows the new unit is free from magnetic variation. It may be used as an astro compass or as a sun or star compass to check true north.

COMMUNICATIONS

No Radiomen for NWA

Northwest Airlines plans on flying the Pacific between Seattle and Honolulu without radio operators by making use of an elaborate radio-telephone circuit jointly operated by Northwest, United, and Aeronautical Radio, Inc. During survey flights to Hawaii it was found that they were able to get clear reception during the entire 11 hour and 50 minute flight. Not only have these messages reached the coastal stations but they have been picked up as far inland as Minneapolis and St. Paul.

To accomplish this Northwest spent $26,000 in installation of additional facilities at their Seattle station. This equipment provides both point to point and air ground communications. Coupled with the facilities of United Air Lines at San Francisco, the stations provide "back-up" service in the event of failure of one of the systems.

In addition to the Arinc station in Honolulu, Northwest planes are able to keep in contact with "the fox," a search and rescue vessel of the U. S. Coast Guard which is located in the Pacific and equipped with radio, beacon and other communication facilities. Weather forecasts are also available from this vessel.

16 DME Sets Ordered

The CAA has placed an order with Federal Communications Laboratories, a research unit of the International Telephone and Telegraph Corp., for 16 sets of distance measuring equipment. This is the component used with the omnidirectional ranges to provide cockpit indications of the distance between the airplane and the radio station. DME was demonstrated in the transition phase showing of the RTCA program at Indianapolis from November 8 through November 23.

In operation a transmitter in the aircraft sends out a signal to the ground station where a responding signal is directed back to the aircraft, the time interval is automatically calculated and transposed into distance measurements which appear on a simple instrument. The intrument dial looks very much like an automobile speedometer.

SAFETY

False Fire Alarms

The CAA is including tests of stainless steel sealed baggage compartments in their aircraft fire prevention test program currently under way at Indianapolis.

Some airline engineers, harried by their unhappy experiences with detectors and extinguishers, think that may have to be the ultimate answer, weight penalty or no.

The resigned attitude which both aircraft and airline engineers take toward the subject of baggage compartment fire prevention is understandable. In the first six months of this year the airlines experienced 218 instances of false alarms from baggage compartment detecting equipment, thus creating the added risk of landing under less than normal procedures. Since that time these detectors have been disconnected and efforts are being made to improve the equipment.

There are few known instances of baggage fires, and one of these was caused when a passenger in the lavatory tossed a cigaret into a wast receptacle and the ensuing fire spread into the rear pit.

There have been no fatalities from baggage compartment fires. On the other hand, a false alarm is generally con-

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ceded as having been the origin of a fatal crash of severe proportions.

Little Hazard. Railroad history discloses no evidence of the hazard of fire in baggage. Such industry experiments as have been made in baggage burning have produced negative results.

But whereas opinion may be that the actual hazard of a baggage fire is so remote as to be negligible, no one in the industry is likely to come out for the elimination of detecting equipment as a matter of policy. It might have the appearance of a backward step.

Thus it is that some airline engineers feel the eventual outcome will be a baggage or cargo compartment where a fire could burn until it died out without damage to the aircraft. If such should be the case, stainless steel with an outer lining of fibreglass is regarded as a logical way to do it. Just how much of a weight penalty would be exacted is a matter of debate, some engineers feeling it would not weigh much more than a system of detection and extinguishment.

Non-Flammable RPM

Another non-flammable hydraulic fluid has been introduced to the market by California Research Corp., research organization of Standard of California. To be known as RPM Non-Flammable Hydraulic Fluid, the new product has been under development for over two years. Originally Standard felt that it would be desirable to develop an interim fluid until the ultimate goal could be reached but the rapid development permitted marketing of the objective fluid now.

The non-flammable fluid has undergone all types of tests to determine its characteristics under heat, cold weather operation and similar conditions as well as its lubricating characteristics. Testing included simulated flight tests by CAA at the Indianapolis Experimental Station using a wing section and engine from a B-29.

As with all the non-flammable fluids announced to this date use of RPM will require some packing changes in the aircraft hydraulic systems.

Learning from Crashes

The Air Force is planning to crash-land five radio controlled B-17 airplanes in Chocawhatchee Bay off the coast of Florida to get valuable data on ditching. The airplanes, some of which took part in the Bikini atomic bomb experiments, are expected to be damaged beyond repair. Special cameras and other instruments will record the crash landings and provide what the Air Force feels will be valuable information on which to base ditching procedures and other emergency landing information.

Immediately following the crash, each ship will be towed ashore and an intensive study made of the craft to determine what might be done in future designs to minimize the damage.

SAFETY SLANTS

THE PRESENCE of rain on the windshield causes a reflection error according to Canada's National Research Council. This is the result of the shape and pattern of ripples formed and the reduced transparency of the windshield under these conditions. The error may amount to as much as 5 degrees in angle or about 1 in 12. Consequently, a hilltop or peak one mile ahead of a plane could appear to be 200 feet lower than it actually is. Pilots have been reminded to bear this in mind when flying in rain particularly when combined with low visibility.

•

Importance of keeping adequate air pressure in the nose wheel strut is emphasized by a recent incident in which pilots of Braniff Airways were unable to retract the gear on a DC-4 because the pressure in the strut was insufficient to straighten out and lock the nose wheel in the centered position. In attempting to raise the cocked gear the nose wheel struck the door mechanism and damaged it. On landing with the wheel cocked the greater part of the nose wheel steering system components were damaged.

•

Following the item in this column for Nov. 1 relating to difficulties experienced by United Air Lines with recapped tires, a letter was received from Thompson Aircraft Tire Corp., the agency that does United's work. This firm states that the failures in concern were the result of the *tire manufacturer's process* and qualifies this by commenting that the ply separation "occurred between their (the manufacturer's) original rubber and cords—and we now have found several more of this manufacturer's tires that had the same product fault even though we had never retreaded them."

Thompson is a major organization in this field and reports it has "retreaded more than 40,000 airplane tires without a single failure." Aircraft tires remain an all-important item and any precautions which the manufacturer, recapping agent or user can exercise to insure the ultimate safety of the product in use should not be overlooked.

•

Even this early in the winter season one airline has encountered inoperative elevator flettners as a result of water collecting in the control surfaces. Only after lowering to 18,000 feet altitude was it possible to work the flettner loose. This emphasizes the need for checking surface control drain hole provisions, making sure grommets on the upper surface of the controls are sealed and checking drain holes in flettner drums to see that they are open.

MAINTENANCE

Streamlining LAS

Marc T. Worst has been given operational direction of MacArthur airport base of Lockheed Aircraft Service, in addition to his regular duties as vice president and Burbank base manager. Previous to his appointment as vice president last May, Worst had served as base manager of the LAS installation at Shannon Airport, Eire.

Now in his 20th year in the aviation industry, Worst joined Lockheed in 1938 and was one of the original group which started in its service division, forerunner of the present maintenance subsidiary, when it was activated in 1939. He served as production manager at Lockheed's mammoth wartime overhaul and modification center at Langford Lodge, near Belfast, between 1942 and 1944.

Worst played an active part in setting up the Navy Lockheed Service Center at Van Nuys, Calif., after his return from Europe in 1944, and in organizing the Lockheed customer's service school.

In the organizational adjustment to streamline LAS's operations, W. R. Rhoads, MacArthur base manager, was appointed assistant to Vice President W. H. Wayman; Duane O. Wood, Burbank supervisor of planning, was named work superintendent of MacArthur base; and K. V. Sampson, former Lockheed chief accountant, was appointed assistant MacArthur base manager.

UAL Economies at S. F.

With the concentration of engineering offices and shops at their San Francisco overhaul base, United Air Lines has been able to level off the "peak and valley" periods and use advance scheduling to achieve a steady flow of work. Typical of the economies is the general increase in efficiency in the cabin overhaul section by 15% while increasing overall production by 50%. Use of a special 84 ft. table for cutting out fabric has already paid for its initial cost by the vast number of man hours saved over previous methods.

In the engine section, time required to clean an engine prior to overhaul has been reduced from 66 hours to 11 hours by the production line method and the actual output of the engine overhaul shop has increased by some 300%. Average monthly engine overhaul rate has risen to 119 engines.

United now has 2,100 employes at the S. F. base as compared to 1,400 in the early summer.

Standardized Manuals

IATA is considering adopting a single standard for maintenance manuals which would simplify certain phases of manual design. This system has been considered by ATA from time to time but never met with acceptance. However, members of ATA have been given the opportunity to aid in formulating the IATA standards.

The proposal would separate maintenance and overhaul activities as well as ground handling instructions and would provide a physical standard including page size, binding, means of revision, etc.

A similar program is being laid out for the flight manuals.

Reworking DC-4 Nose Gear

Douglas Aircraft Co. has recommended another change in the nose gear hydraulic system of the DC-4 airplane to prevent recurrence of the various gear malfunctionings which have caused extensive damage in the past. The trouble has been centered around the use of an orifice in the associated hydraulic system. Bits of packing had caused this orifice to become clogged and in some instances thermal expansion of the trapped fluid overrode the down latch and enabled the gear to collapse during ground taxiing.

The orifice was relocated and the oleo strut packings were replaced but even then a clogged orifice resulted in a nose gear that would not extend. The new recommendation was submitted to the operators and CAA for comment and has recently been made a mandatory change on air worthiness directive card 48-44.

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diameter floating pin is used in a .090 diameter orifice hole in place of the original fixed orifice. In addition to this the chevron packing on the nose gear piston assembly is being replaced with two synthetic packings and two leather chevrons.

Sisto Plea Rejected: CAB has denied a petition of Charles R. Sisto asking the Board to stay its recent decision revoking his pilot's license. CAB held that a stay would be contrary to the public interest. However, Sisto may file for rehearing, reargument, reconsideration or modification of the order.

Daily Plane Utilization

International

	July	August
American		
2 eng. pass.	....	8:14
4 eng. pass.	4:46	3:42
cargo	4:53	5:49
American Overseas		
2 eng. pass.	1:33	1:32
4 eng. pass.	8:20	7:41
Braniff		
4 eng. pass.	4:21	4:38
C & S		
4 eng. pass.	4:51	6:42
Colonial		
4 eng. pass.	4:50	4:41
Eastern		
4 eng. pass.	9:35	9:10
National		
4 eng. pass.	6:15	7:07
Northwest		
4 eng. pass.	10:48	10:42
Panagra		
2 eng. pass.	4:39	4:20
4 eng. pass.	4:52	4:51
cargo	....	15:15
Pan American		
Latin American		
2 eng. pass.	6:07	5:37
4 eng. pass.	9:05	9:08
cargo	3:55	3:45
Atlantic		
2 eng. pass.	3:35	3:17
4 eng. pass.	8:16	7:28
cargo	6:16	5:03
Pacific		
4 eng. pass.	9:32	10:16
cargo	10:44	10:28
Alaska		
4 eng. pass.	8:08	8:14
cargo	6:27	6:35
TWA		
4 eng. pass.	7:42	8:20
cargo	4:01	7:05
United		
4 eng. pass.	6:08	6:28

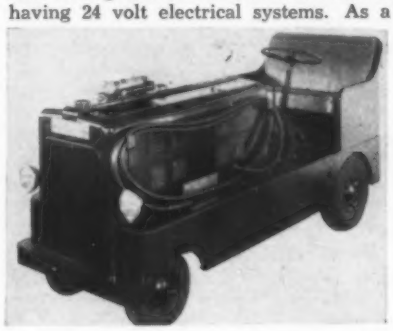
Feederline

All American		
Stinson SR-10-C	3:47	4:28
Beech D-18-C	7:34	4:57
Challenger		
DC-3	6:50	6:50
Empire		
DC-3	7:52	6:05
Florida		
Beech D-18-C	3:44	3:50
Monarch		
DC-3	6:47	6:55
Piedmont		
DC-3	9:37	9:26
Pioneer		
DC-3	7:48	8:00
Southwest		
DC-3	6:05	6:02
Trans-Texas		
DC-3	7:58	8:02
West Coast		
DC-3	6:01	5:55
Wisconsin Central		
Lockheed 10A	4:16	5:28

NEW EQUIPMENT

Power Unit & Tractor

The Motor Generator Corp., Hobart Square, Troy, Ohio, has introduced a combination ground auxiliary power unit and towing tractor for use with aircraft having 24 volt electrical systems. As a



power unit the new assembly is rated at 600 amperes at 28.5 volts continuous or 750 amperes for three-minute intermittent duty. As a towing tractor it has a drawbar pull of 2,000 pounds and a towing capacity of 25 tons on level surfaces.

The generator is driven by a Chrysler IND-7-2, 6-cylinder, industrial type engine at 1800 rpm. The control panel assembly for the generator and engine is mounted as a dashboard, accessible though two hinged doors. The generator is connected through a clutch to the transmission and the transmission is connected directly to the differential. Dimensions of the units are: width 29″, length 106″, height 52″. Turning radius is 130″ and maximum speed is 10 mph.

Hand Truck

A new design in hand trucks is being marketed by Melooz Manufacturing Co., 4730 Avalon Boulevard, Los Angeles, Calif. Known as the Tri-Truck, the new unit stands 56 inches high, is equipped

with 10-inch diameter, rubber-tired wheels and a free swiveling hard rubber caster. It can be tilted and locked in a wide range of positions.

The Tri-Truck features hard wood construction with steel legs and bracing. Once loaded it can be set on weighing scales or in elevators without manual support. This feature saves rehandling of merchandise, which is to be weighed and eases the load imposed on the user.

Worksaver Forklift

Available for immediate deliveries are the new Yale and Towne Worksaver forklifts which provide 2,500-pound capacity in a 1,965-pound assembly. Overall dimensions of the new unit minus forks is 39 by 31 inches and height of the mast is 83 inches. The truck is battery operated for travel and lifting loads. The unusually compact design of the Worksaver and its low weight will permit it to be in restricted areas and in applications where low allowable floor loads would not ordinarily permit use of a forklift truck. The Worksaver will be demonstrated at the National Materials Handling Exposition to be held in Philadelphia, Jan. 10-14. Additional information available from The Yale and Towne Manufacturing Company, Philadelphia Division.

Dry Chemical Fire Killer

Walter Kidde & Co. of Belleville, N. J., has designed a dry chemical powder fire extinguisher for use against flammable liquid and electrical fires. Available in 20- and 30-pound capacities, the new extinguisher uses carbon dioxide to pressurize the powder and expel it from the discharge nozzle when the trigger type control is operated. The entire charge is not necessarily discharged continuously but may be retained in the cylinder by simply releasing the trigger, making it possible to use the extinguisher again without a time lag.

The design of the bottle simplifies holding it with one hand while directing the nozzle with the other. The nozzle causes a swirling action of the extinguishing powder. The manufacturer claims that fire killing dry powder is more effective against deep-seated, hard to reach fires than conventional agents.

Hermetically Sealed Relays

Increased use of hermetically sealed relays in aircraft has been recognized by the Advance Electric and Relay Co. and arrangements made for sealing any desired relay and, if necessary, vacuum sealing also. Relays which can be sealed in this manner are cannon pressure sealed plug, octal plug-in type, solder lug type or screw terminal type. As an alternate to hermetically sealed installations, dust type covers which are removable may also be provided. The entire line of Advance Electric and Relay Co. products are now illustrated in their new catalog which is available free upon request. The catalog contains descriptive detail, dimensions, contact combinations and prices. Copies available from Advance Electric and Relay Co., Los Angeles, Calif.

Axial Air Gap Motor

Fairbanks, Morse, & Co., 600 South Michigan Ave., Chicago 5, Ill. now has an axial air gap motor available as a

motor reducer in ratings from ¾ to 10 h. p. The motor features a reduction in size to one-half that of a conventional motor and a weight reduction of approximately one-third. The motorgear uses single helical gearing arranged in simple trains with the low speed shafts parallel to the centerline of the motor shaft. This group of motors is suitable for horizontal mounting as well as wall, ceiling or angle mounting providing the shafts remain horizontal. Additional information available from the manufacturer.

Electronic Slide Rule

An electronic computer designed by Goodyear Tire and Rubber Co. for the USAF and now in use by the manufacturer, the Air Force, and the University of Michigan can be used to solve approximately 90% of all computations that are requiured by research engineers. Problems of motion can be solved by the computer in about the same time as is required for the action to take place. In a typical application the machine can determine the speed, acceleration, distance traveled from the starting point, etc. of a falling object while it is in motion.

About the same size as a large candy dispensing machine, the computer weighs approximately 800 pounds, is two feet square and six feet tall. Although it contains 100 radio tubes there are very few moving parts. Operation is relatively simple with only one months' time required to train an operator of high school background.

Showdown Ahead?

After weeks of fruitless high-level negotiations, the feud between the Airport Leaseholders Committee and the Port of New York Authority flared in the open again a fortnight ago.

The Port Authority reaffirmed its determination to renegotiate the airline leases for tenancy of New York International Airport on a basis which it considered to be "compensatory, equitable and flexible," whereas the nine airlines involved termed the Authority's proposals a totally unacceptable ideology and insisted on adherence to their original contracts with the City of New York, with a prompt lifting of the "blockade" which they asserted the Authority had erected against their use of the big international facility at Idlewild.

One thing was certain. The impasse could not be allowed to continue much longer. Both sides had a stake in settling the matters at issue. For its part, the Port Authority could never hope to develop Idlewild to meet the needs of the steadily evolving air transport industry without the support of all the airlines. And the airlines, for their part, needed the new facility because of traffic congestion at La Guardia and because of their early expectations of using large new transports such as the Boeing Stratocruiser.

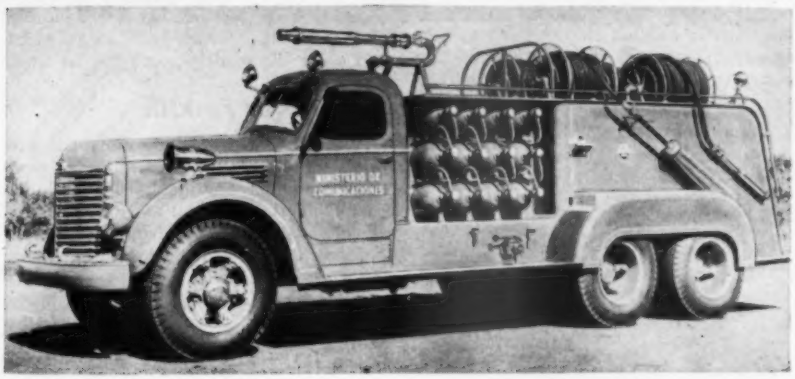
In fact, it was the Stratocruiser which might bring on an early showdown in the feud, for deliveries of these planes to the airlines will start within a few weeks, and the Port Authority recently declared both Newark Airport and La Guardia unusable by the 142,500-pound planes, thus leaving Idlewild as the only airport in the New York metropolitan area that could accommodate them. And the utility of these expensive aircraft would be seriously curtailed if they could not serve New York.

Self-Annointed Immunity. Something had to give—and soon—and George W. Whiteside, counsel for the leaseholders, said he saw no alternative left but to bring suit against the individual Commissioners of the Port Authority and the executive staff of the body. The Port Authority all along has claimed for itself certain sovereign rights, chief of which is immunity to suit, but this alleged immunity has not yet been tested in the courts.

One of the major points of contention is the Port Authority's proposal to throw out the old sliding-scale landing fees and base the fees for landing at Idlewild on plane weight, regardless of the number of schedules operated. The airlines said this was "an ideology borrowed from Europe and at variance with the general practice in the United States."

Howard S. Cullman, chairman of the Authority, countered with the charge that the "wholesale rate system" fostered by the airlines would provide discounts up to 64% for larger carriers and would penalize smaller lines.

Under this system, he said, flight fees paid at La Guardia in a recent month by American Airlines averaged 3.42c per 1000 lbs. of aircraft weight, while fees paid by Colonial Airlines averaged 9.93c per 1000 lbs. He added that during a recent test month at La Guardia, scheduled domestic carriers paid $5.11 per DC-4 departure, scheduled overseas carriers paid $15.33 or three times as much per DC-4 take-off, and non-scheduled and contract carriers paid 10 times as much. He said the Authority could not tolerate such discriminatory charges.



Emergency Fire Truck— Shown here is one of six emergency fire trucks made by Walter Kidde & Co. for export to Venezuela where they will be used at Maiquetia (airport for Caracas) and at Maracay airport. Four of the trucks will be of smaller size for use at less important airfields in Venezuela.

The large units are equipped with twelve 100-lb. cylinders, utilizing Kidde rapid flow flood valves and arranged for operation in two groups of six. Hose nozzles are capable of discharging 300 pounds of CO_2 per minute. The smaller trucks carry four 100-lb. CO_2 supply cylinders.

S. F. Airport Bond Defeated

Aviation and business interests in San Francisco for the past fortnight have been considering what stopgap measures might be taken to meet increased costs in the city's airport development program, the success of which is threatened as a result of failure of San Francisco voters to approve an $8,600,000 airport bond issue in the recent election.

Civic leaders promptly asserted that another bond issue will be tried at the next opportunity and promised that work would be started early on a campaign to bring about the affirmative vote.

Los Angeles aviation leaders, too, were concerned over the possible effect the San Francisco vote might have on a larger airport bond issue which they plan to put before L.A. voters within a few months.

Another airport bond issue was defeated in Cleveland by a margin of 5% of the votes. This issue was to provide $9,000,000 for future development of Cleveland Municipal Airport. The Port of New York Authority tartly commented that the San Francisco and Cleveland defeats indicated an unwillingness on the part of taxpayers to continue to carry the burden of airport development as a local subsidy to scheduled airlines.

Top Airports for 1948

After considering the merits and defects of some 400 airports of every size and description, the National Aeronautic Association two weeks ago made public the names of the four airports which, in their respective categories, were considered most deserving of the 1948 Haire Airport Trophy awards.

The award for outstanding achievement in airport development, planning and operation in international airline terminals went to New York International Airport (Idlewild), while that for domestic airline terminals went to Charleston, West Virginia's municipal airport.

Bradley Field, at Boise, Idaho, was chosen as tops in the classification of "close-in, in-town, or resort airpark or air harbor," and University Airport, Davis, Calif., was honored in the category of an "airport serving only non-scheduled flying, both commercial and personal." Honorable mention in the competition was given to the Quakertown, Pa., airport.

Representatives of the four winning airports were presented with trophies at a joint banquent of the National Aviation Trades Association and Aviation Distributors and Manufacturers Association in Cleveland.

Hairport Barbers: It's happened at last. The tonsorial parlor in the administration building at Wold-Chamberlain Airport, Minneapolis, Minn. has adopted the name of "Hairport Barbers."

Setback for Forwarders

Latest round in the battle between the freight forwarders seeking permission to act as indirect air carriers and the airlines that are bent on freezing them out went to the airlines last fortnight when the U. S. Circuit Court of Appeals in Chicago granted the carriers' motion for a stay of the effectiveness of the Civil Aeronautics Board's order legalizing the forwarders.

Fifteen certificated airlines in late October had petitioned the court for a review of CAB's Freight Forwarder Case decision and asked for a stay of the order pending the review. Whatever the outcome of the review might be, the stay was seen as a blow to the forwarders, for it would halt the issuance of letters of registration to forwarders by CAB and probably would invalidate letters issued since the forwarder decision was handed down in October, or at least would hold in abeyance all operating authority granted the forwarders in this decision.

An important aspect of the stay order, from the airline point of view, was fact that until the court reaches a final decision they will not have to renegotiate their contracts with the Railway Express Agency along lines laid down in the Board's decision in the forwarder case.

Because portions of the 9,000-page record in the case would have to be printed and filed with the court, following which briefs would have to be filed and arguments heard, chances were that a final decision in the case might be at least six months in the future. It was another blow to the non-certificated cargo carriers who had hoped to get much business from the forwarders.

Longer Cargo Stops?

Are present time limitations (45 minutes) on scheduled airline stops too drastic, particularly on non-passenger revenue flights? The Civil Areonautics Board had been told they were, so last fortnight it sent out a draft release of a proposed Economic Regulation change which would allow scheduled stops of up to two hours on non-passenger flights.

The rule would be changed to provide that: (1) "A scheduled stop at a point within the continental U. S. with respect to a flight carrying any passengers in addition to crew members shall not be scheduled to exceed 45 minutes on any flight if the origination or termination of such flight at such point is prohibited by any restriction in the certificate; and (2) a scheduled stop . . . with respect to a flight carrying only property or mail in addition to the crew members shall not be scheduled to exceed two hours . . ."

Comments are sought from the industry, with Dec. 20 as the deadline.

TWA Cargo Buckle—New cargo belts, designed by three TWA employes at Kansas City, are being installed on all of company's DC-4 cargo planes. The improved compact buckle works on friction principle and is slip-proof. The new belts are permanently fastened to sides of plane, and the loose ends easily hooked to floor when cargo is loaded. Previously-used seat belts were supposed to be stored in a box at rear of plane, but cargo handlers frequently left them on floor where they were damaged. Delbert Bradley (left), draftsman, Lloyd Mielke (right), engineer, and E. R. Goodlet, supervisor of the structure group, are credited with the design.

Cargo Lift Offer

United Air Lines moved in November to lend a hand to relieve the shortage of military cargo lift in this country due to the shift of military aircraft to the Berlin air lift.

Specifically, United asked the CAB for temporary permission to move military cargo between various cities and military bases on its system, including: Westover Air Force Base, Chicopee Falls, Mass.; Olmstead AF Base, Middletown, Pa.; March AF Base, Riverside, Calif., and Hill AF Base, Ogden, Utah.

In view of the fact that UAL's request was backed up by a letter from the Deputy Chief of Staff, Air Materiel Command, and the further fact that CAB had earlier issued a similar exemption to a non-certificated cargo carrier, Slick Airways, it was expected that approval of United's application would be granted.

Savings on Volume

United Air Lines is now offering a service under which volume shippers of packages weighing less than 100 pounds can save from 7% to 60% on air freight charges by consolidating two or more packages into a single heavier shipment on which lower rates are applicable.

As an example, ten 10-lb. packages can now be shipped via air freight from New York to Los Angeles under the 100-lb. rate for only $27.50, as compared with the regular air freight charge of $70, air express charge of $73.70, and air parcel post charge of $66.50.

Consolidation charges are 25c per package, with a minimum charge of $1, but a consignor may consolidate his own shipment and UAL will break down the shipment at destination for delivery of the component parts to more than one consignee. Also, packages may come from more than one consignor.

AA Sets Cargo Record

American Airlines again broke its record for the carriage of cargo during October, following a record high month in September.

Air freight alone reached a new peak of 2,474,690 ton miles in October, an increase of more than a quarter-million ton miles over September.

Air express jumped nearly 50,000 ton miles, from 479,289 in September to 526,764 in October. Air mail rose from 736,644 ton miles in September to 773,364.

UAL Cargo Sales Plan: United Air Lines has established air cargo sales and information units in ticket offices across its 80-city system, making it possible to obtain information on air freight, air express, and passenger reservations with a single telephone call.

A 10-day training course for key cargo and reservations personnel has just been completed at the company's educational center at Cheyenne, Wyo. Those who attended now are helping train others in the fundamentals of better cargo selling. Goal of the plan is to make every reservation and cargo agent an expert air cargo salesman.

Chart for Shippers: American Airlines has prepared for the use of exporters a 17 x 22 wall chart graphically illustrating the proper method for filling out the Shipper's Export Declaration (Form 7525-V) in accordance with U. S. Customs requirements. Companies having use for the chart may obtain copies from Joseph D. Boylan, director of cargo sales, American Airlines, 100 E. 42d Street, New York 17.

Mail Order Freight: How air freight is re-stimulating mail order sales is illustrated by the success of Mrs. Jo Hall, manager of Montgomery Ward's store in Rapid City, S. D. Since she first offered 48-hour service on mail orders last March her mail order business has almost doubled, despite the fact three new retail department stores were established in Rapid City in the past year. Using Western Air Lines air freight facilities out of St. Paul, where Montgomery Ward's mail order depot is located, Mrs. Hall's daily shipments now average about 425 lbs. "By using Western Air Lines, we cut delivery time from seven to two days," Mrs. Hall said.

Capital Airlines' Night Coach Service Off to Good Start

By Eric Bramley

An encouraging 57% passenger load factor for the first 19 days, 734 advance sales on the books, and financial results which are good for an operation only three weeks old, are convincing Capital Airlines officials that they have something in their New York-Chicago Nighthawk coach-type air service.

The service, which carries a passenger between the two cities for $29.60 plus tax (against railroad of $27.30 plus tax), was clicking nicely as it neared the end of its third week. The load factor for the period was 57% For the seven days ending with Nov. 22, it was 67% eastbound and 67% westbound. On two occasions, trips had carried 59 passengers, a full load. The overall load factor (passengers, mail and express) had been rising steadily, and hit a high of 90% on Nov. 19, after starting at 20% on Nov. 4.

Eleven Newspapers carry coach service ads like this.

Because this is the first scheduled airline coach service, the advertising approach has been different. To reach the rail coach passenger, Capital has purchased space for 26 large posters (28" x 40") in Chicago subway stations, and is considering doing the same in New York. In Pittsburgh, buses and street cars are used.

Believing that college students homebound for the holidays will produce a substantial amount of business, the airline is advertising in student publications at Rutgers, Princeton, Harvard, Yale, Columbia, Fordham, New York University, Holy Cross, Illinois, Notre Dame, University of Chicago and Northwestern.

Seven newspapers in the New York area (with circulation in excess of 5,000,000), and four in Chicago, are carrying coach service ads.

Financial Hush. On the all-important question of how the service is doing financially, Capital officials aren't talking for publication. Principal reason is that the company is using a rather novel, hard-boiled accounting method to cover the operation. Initial heavy advertising expenses are being charged off on a day-to-day basis, instead of being pro-rated over any extended period. Certain revenues aren't being credited to the trips.

If a normal accounting method was used, however, certain conclusions could be drawn. J. H. "Slim" Carmichael, Capital president, had stated before the service started that a profit would be possible with a 50% passenger load factor. This would produce $1.12 a mile, plus 15c for mail and 30c for express and freight, or a total of $1.57. Expenses were estimated at $1.40. Since then, however, the latter figure has been dropped to $1.28.

With the present passenger load factor running close to 70%, it would be a safe conclusion that Capital will have a good argument to present to the Civil Aeronautics Board when it asks to have the coach tariff (which is on a 90-day basis) renewed.

Day-to-day passenger loads on the coach service from its inaugural on Nov. 4 through Nov. 22 are shown below:

Nov.	NY-Pittsburgh	Pgh.-Chicago	Chicago Pgh.	Pgh.-NY
4	7	7	13	13
5	20	12	30	35
6	canceled	6	17	25
7	36	27	18	21
8	30	14	31	37
9	24	19	27	32
10	canceled	3	24	33
11	45	42	40	47
12	40	35	37	40
13	50	43	49	58
14	31	35	28	34
15	47	38	54	59
16	29	27	43	43
17	25	25	31	33
18	32	27	30	35
19	49	38	32	39
20	50	43	55	59
21	52	54	27	35
22	47	39	39	44

PAA Tourist Flight Clicks

Pan American Airways' tourist class service between New York and San Juan, Puerto Rico attained an overall passenger load factor of 81.5% during the 47 days from its start on Sept. 24 through Nov. 10.

Company reported 94% load factor on northbound flights, with 2,785 seats filled out of 2,961 available. Southbound passengers totaled 2,039 for 68.8% load factor. Northbound traffic was described as constant throughout the week, while southbound the 63-seat DC-4's were filled almost to capacity on weekends.

PAA'S regular fare service to San Juan was reported down about 20% during the same period, but company officials expect a good pickup in de luxe traffic during coming peak season.

Convair Pay-Off

Pilot familiarization flights and other operating experience necessary before a new type of aircraft can be put into commercial service are costly to an airline, but Continental Air Lines is doing its best to balance the expenses with income.

By combining charter business and sightseeing hops with its familiarization program, Continental has flown its five Convair-Liners into 16 of its 26 cities in the past 90 days, thereby permitting pilots to become familiar with the route, giving ground crews actual experience in servicing and loading the new plane in preparation for inauguration of scheduled service in mid-December.

It has collected $58,000 in charter revenues at the same time.

When CAL first began accepting delivery on the Convair-Liners in late summer, a separate section was set up within the schedules and tariffs division solely to handle Convair charter flights.

Staffed by Bob Davis, traffic representative, and Josephine Balagna, traffic secretary, this section booked 30,000 plane-miles of charters in October, which brought in about $34,000, or approximately 12% of the line's passenger revenues for the month. An additional 24

charters, mostly of football teams, brought in revenues of $28,000 for 18,000 plane-miles of travel in November and December.

Another angle played by CAL has been to offer short flights over Denver for $2.50 per person. In Denver alone, some 2,500 persons made these sightseeing hops, which introduced the new Convairs to the public at minimum expense to the company.

ADVERTISING

Fill-'Em-Up Program

With the domestic trunkline air carriers providing an estimated 11 billion seat miles of capacity this year and generating approximately 6,000,000,000 revenue passenger miles of traffic, one of the big concerns of the airlines has become the empty seat—the little man who isn't there.

The industry decided last month on an aggressive advertising program calculated to put a lot of the now missing little men into a lot of the now empty aircraft seats.

The advertising campaign, which will be undertaken on a three- to five-year basis with expenditures reaching $500,000 to $750,000 annually, will supplement advertising and publicity expenditures of the individual carriers, who this year alone will spend some $10,000,000 largely directed at filling available space.

Recommendations for the new industry advertising campaign have been approved by the Air Traffic Conference of the Air Transport Association, and the ATC's Advertising Committee, headed by Harold Crary, United Air Lines' vice president of traffic and sales, is developing a specific program for later approval of the Conference and ATA.

Capacity Beyond Market. The Advertising Committee stated that from 1946 to 1947, first class rail passenger miles dropped 38%, rail coach passenger miles dropped 29%, and air passenger miles increased 1.82%. From 1947 to 1948, air passenger miles will show about a 4% decrease, it said, and rail passenger miles will drop 11% to 12%.

"Comparatively, we are not losing ground swiftly," the committee continued, "but our capacity is increasing far beyond our presently created or existing market."

It pointed out that the advertising and publicity effort of the industry has been and is "largely devoted to featuring new equipment and seeking to divert those passengers already sold on air transportation from one carrier to another." The new program, by contrast, will be aimed at attracting new customers.

After the program has been developed and approved, a subcommittee of three members will be appointed to administer it. The advertising contract will go to a firm or agency which does not now serve a member carrier or a client in some competing form of transportation.

9-Month Passenger Loads Down

Call it too few passengers or too many seats, and either way you'll be right as to why the domestic trunk airlines experienced a drop of 7.9 percentage points in their passenger load factors for the first nine months of this year, as compared to the comparable 1947 period.

Figures filed with the Civil Aeronautics Board by the 16 lines show that they boarded an aggregate of 9,243,751 revenue passengers and flew 4,397,971,000 revenue passenger miles from Jan. 1 through Sept. 30, 1948, as compared to 9,294,413 passengers and 4,580,508,000 passenger miles in the same nine months of last year.

This figures out to be a drop of 5.4% in passengers and 3.9% in passenger miles. The fall-off did not apply to all the carriers. Four of them flew more passengers and more passenger miles this year than last. These were Colonial, Eastern, Mid-Continent and TWA.

As it turned out, however, three of the four carriers registering traffic gains had passenger load factors lower by several percentage points than those for last year. Colonial, although its traffic increase was almost negligible, was the only carrier among the 16 domestic trunklines to boost its passenger load factor for the period. It increased from 61.0% in the first nine months of last year to 63.6% in the same period of 1948.

Too Many Seats. Average passenger load factor for the entire group fell from 67.1% last year to 59.2% this year—quite a sizable drop considering the slight decline in traffic. Obvious reason for the slump in passenger load factors, even of three lines which had traffic gains, was excess capacity.

The number of available seat miles flown by the 16 trunklines in the first nine months of 1948 was 7,426,561,000, as against 6,828,678,000 in the first three quarters of last year. The larger capacity postwar planes were a big factor in this gain. This increase of more than 600 million seat-miles of capacity, coupled with a small drop in traffic, caused passenger load factors to take a plunge.

The decline in passenger traffic was offset in part by increases in all other categories of traffic this year. Outstanding was the gain in freight volume, which soared from 20,544,110 ton miles in the first nine months of 1947 to 48,334,738 ton miles in the comparable period this year—a gain of 135%.

Air express volume this year was

U. S. Domestic Airline Traffic

First Nine Months of 1948 and of 1947

Carrier		Revenue Passengers	Revenue Pass.-Miles (000 omitted)	Pass. Load Factors	Express Ton-Miles	Freight Ton-Miles
American	'48	2,053,473	950,784	59.4%	4,002,257	14,593,018
	'47	2,094,603	1,058,699	71.3%	3,523,431	6,545,658
Braniff	'48	417,750	145,383	55.3%	638,206	865,104
	'47	419,878	148,799	62.5%	586,169	253,895
Capital	'48	776,304	206,780	49.2%	1,397,843	3,527,864
	'47	842,281	220,250	53.4%	1,523,351	1,437,776
C & S	'48	208,170	79,356	57.6%	452,705	395,031
	'47	213,340	83,550	59.1%	479,651	233,758
Colonial	'48	106,946	29,583	63.6%	38,632	25,447
	'47	105,073	29,302	61.0%	45,560	.....
Continental	'48	122,601	44,916	51.8%	73,357	193,943
	'47	133,084	45,271	57.3%	62,689	83,940
Delta	'48	362,130	137,245	52.3%	623,752	1,221,927
	'47	374,157	154,921	63.1%	513,246	485,517
Eastern	'48	1,507,459	747,245	60.2%	2,687,593	3,851,032
	'47	1,254,712	650,695	62.9%	1,324,619	1,216,308
Inland	'48	55,681	20,462	60.0%	39,478	56,322
	'47	61,436	21,551	66.2%	31,451	20,618
MCA	'48	235,748	70,207	58.9%	137,855	201,309
	'47	203,306	62,060	62.3%	105,943	53,355
National	'48	111,454	60,286	37.5%	416,125	514,563
	'47	238,952	123,755	57.1%	294,873	338,621
Northeast	'48	214,106	40,868	47.9%	81,022	151,737
	'47	251,258	48,294	50.2%	82,861	25,649
Northwest	'48	481,647	256,225	58.7%	1,271,493	1,509,718
	'47	505,266	272,176	71.1%	1,230,115	462,111
TWA	'48	922,909	647,678	60.3%	4,207,862	6,750,703
	'47	777,963	602,419	67.2%	3,902,619	2,931,496
United	'48	1,455,816	877,477	66.9%	5,154,560	14,000,695
	'47	1,483,411	919,707	74.2%	4,817,467	6,147,411
Western	'48	211,557	83,473	56.9%	221,923	476,325
	'47	335,693	139,059	64.5%	321,383	307,997
Totals	'48	9,243,751	4,397,971	59.2%	21,443,663	48,334,738
	'47	9,294,413	4,580,508	67.1%	18,845,428	20,544,110

21,443,663 ton miles, as compared to 18,845,428 in the first nine months of 1947, which was a 13.8% increase. And air mail volume was up 7.9%—from 23,870,443 ton miles to 25,763,414 ton miles.

NEW SERVICES

PAA Noses Out NWA

Northwest Airlines was the first to be certificated to fly from the Pacific Northwest to Hawaii, but to Pan American Airways will go the distinction of being first to inaugurate service over the route. Pan Am will open the new route Nov. 24, a week before NWA's scheduled inauguration of service.

Chief reason PAA was able to thus get the jump on Northwest, which had a nine-week start in certification, was the fact that PAA already had station facilities and personnel in being at Honolulu, whereas NWA had to start there from scratch.

Initially, PAA will fly twice weekly round-trip schedules between Seattle and Portland and Honolulu, departing the mainland on Wednesdays and Sundays.

A third weekly flight will be instituted next March.

Pan Am's fares from Seattle and Portland will be at the same rate as its fares from Los Angeles and San Francisco to Honolulu and the Orient.

Northwest's first scheduled flight to Honolulu will depart Seattle-Tacoma and Portland on Dec. 2, instead of Dec. 1 as originally scheduled. Flights will be on Tuesdays, Thursdays and Saturdays, while return schedules will leave Honolulu on Wednesdays, Fridays and Sundays.

TAL's Caracas-Rome Service

Transocean Air Lines plans to start semi-weekly flights between Caracas, Venezuela and Rome on Dec. 2 according to Orvis Nelson, president of Transocean. The company recently was authorized by the Venezuelan Minister of Communications to initiate the service for the transportation of passengers, freight and mail. Transocean will use Douglas DC-4 aircraft and intermediate stops will be made at Bermuda and the Azores.

The carrier already has a staff of personnel in Venezuela in connection with its Munich to Caracas transportation of 25,000 displaced persons under a contract with the International Refugee Organization of the United Nations, but a separate force and operation will be set up for the international service to Rome.

Nelson said the new contract marks the entrance of Transocean into the international common carrier field as a supplement to its contract operations which already have totaled more than 14,000,000 miles of long-distance flying since V-J day.

TOURS

Germany Open for Tourists

American Overseas Airlines is preparing to plug tours of Germany following adoption of a new regulation whereby a military permit to enter the country will be granted to a pleasure traveler who can show confirmed and paid-for hotel accommodations. German hotel reservations can be made at any U. S. travel bureau, in cooperation with American Airlines, which will confirm such reservations through its Frankfurt office without extra charge to the customer.

Many hotels have been made available for tourists in the American, British and French zones of occupation through the Joint Export-Import Agency, and for the first time since the war German travel bureaus are now conducting tours through northern and southern Germany, as well as through the Rhineland, lasting three to 10 days. Expenses, including everything, run about $15 per person per day.

The currency exchange for American tourists in Germany has been facilitated by Hotel Coupon Books, holding 100 Deutschmarks, which are sold by American Airlines at the legally established exchange rate of 30c to one D-Mark. With these coupons, visitors pay for hotel rooms, meals in restaurants, travel fares and the like.

FARES

DC-3 Excursions Suspended

TWA's proposed system-wide excursion fare tariff offering a 15% reduction on DC-3 round-trips was suspended by CAB on Nov. 16, acting on complaints filed by Capital Airlines, Mid-Continent, and United. Suspension is effective through Feb. 14, 1949. A hearing will be held to determine whether the proposed rates are unjust or unreasonable.

Round-Trip Bonus

A bonus system in the form of a nickel payment for each round-trip sale has been put into effect in Continental Air Lines' 26 city ticket offices. It is an initial step, the company said, toward an organized sales incentive plan.

Station and traffic managers make pay-offs daily, depositing a nickel for each round-trip sale in transparent miniature banks assigned to all salesmen and ticket counter personnel. These banks show each salesman's progress and stimulate rivalry and competition between personnel at each station and between the various stations.

Bonus payments are made from petty cash, and catchy cartoons and slogans such as "It's Raining Nickels" and "My Gawd! Continental is Giving Away MONEY" are being used to stimulate interest in the bonus plan.

Domestic Fare Plan Summary

As of November 22, 1948

Trunklines

Carrier	Round-Trip Discounts	Premium Fares or Surcharges	Family-Fare Reductions
American	5%	None	Mon., Tues., Wed.
Braniff	None	Approx. 10% on DC-6	None
Capital	5%	None	Mon., Tues., Wed.
C&S	5%	None	None
Colonial	20%*	None	None
Continental	None	None	None
Delta	5%	Approx. 10% on DC-6	None
Eastern	5%	Approx. 10% on Constellation	None
Inland	5%	None	None
MCA	5%	None	Mon., Tues., Wed.
National	None	None	Mon., Tues., Wed.**
Northeast	5%	None	Mon. Noon—Fri. Noon
Northwest	5%	None	Mon., Tues., Wed.
TWA	5%	None	Mon., Tues., Wed.
United	5%	None	Mon., Tues., Wed.
Western	5%	None	Mon., Tues., Wed.

Feederlines

Challenger	None	None	Mon., Tues., Wed.
Empire	5%	None	None
Florida	None	None	None
Monarch	5%	None	None
Piedmont	5%	None	Mon., Tues., Wed.
Pioneer	None	None	None
Robinson	None	None	None
Southwest	5%	None	Mon. thru Thurs.
Trans-Texas	None	None	None
West Coast	None	None	None
Wis. Central	None	None	None

* Colonial offers 20% round-trip reductions during winter months for departures on Tues. or Wed. and return on any days but Fri. or Sun.

** National's family-fare plan was suspended for investigation for 90 days through Feb. 5 on complaints of Eastern and Delta.

Note: Under family-fare plan, a full-fare-paying adult may take immediate family members along for half-fare, including all children up to 21 years of age.

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Engineer Shortage Chief Problem of Plane Makers

By James J. Haggerty, Jr.

A 6,048-mile survey tour of the aircraft manufacturing industry made by this writer reveals that increased production under the military air expansion program is going forward without much difficulty, although there are a number of minor problems confronting the industry.

Chief among these problems is the shortage of engineering personnel. Manufacturers interviewed stated that they could use anywhere from a hundred to a thousand engineers, but have been unable to find them. The problem is one that will cure itself in time, since the main reason for the shortage is the fact that so few graduated from engineering schools during the war years.

The flow of raw materials is adequate, although the supply is not plentiful. There are shortages in one or two metals, which have caused minor bottlenecks, but generally the supply is sufficient to keep the production lines going. Deliveries of jet engines have, in some cases, been behind schedule and finished airframes have been forced to wait for engines. This condition still exists, but the engine deliveries are not so far behind schedule as to cause a serious problem, and are slowly catching up.

Labor is not plentiful, but, except for engineers, manufacturers have been able to hire all the help they need so far. Almost without exception, manufacturers plan further expansion with additional labor requirements, but all expressed confidence that labor would not be a problem.

Although prime contracts have been confined to a small number of contractors, the Air Force and Navy money has been spread around the industry under sub-contract agreements. An excellent example is the Boeing B-50 bomber, in which 14 companies will cooperate under subcontract to Boeing. Boeing, probably the largest military contractor, with orders for 325 planes of four types totaling $242,000,000, has diverted 51.4% of its money to subcontractors, parts manufacturers and raw material suppliers.

Boeing Prepares for Jet. Boeing Airplane Co.'s Wichita Division is now preparing for production of the six-jet Air Force bomber, the B-47 Stratojet. The program, which calls for completion of the first ten planes in 10 months, will require 656,400 man hours. The B-47 will be built at the No. 2 plant, which is currently engaged in B-29 and B-50 modification. The plant was reactivated in March of this year and tremendous strides have been made toward regaining its wartime efficiency.

Boeing officials estimate that approximately 29,000 laborers would be required to handle the entire B-47 program, which is scheduled for increase during the next two fiscal years. However, the division has no intention of expanding to that size. Current plans call for a work force of 15,000, with the remaining work being accomplished by sub-contracting to contractors in the Wichita area. The present work force totals 6500.

The No. 1 plant has just about completed an order for ten L-15 liaison planes for the Air Force.

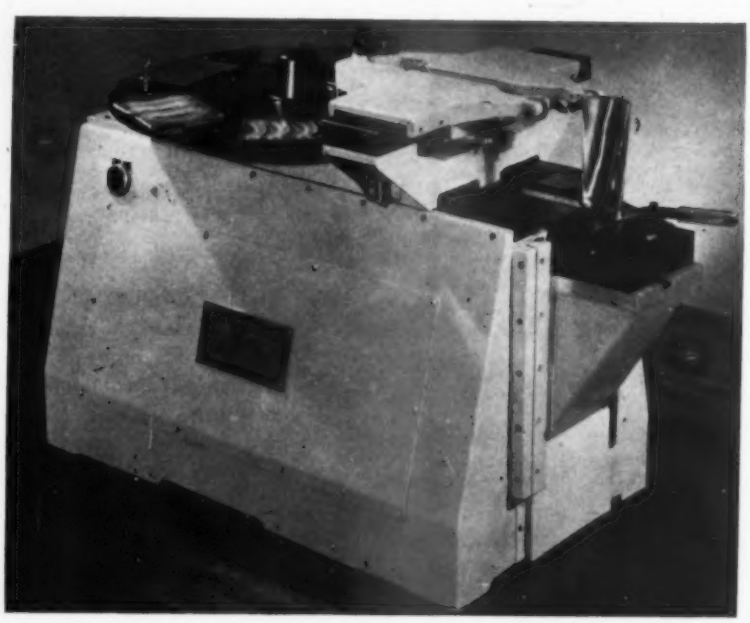
'V' Loans Needed. Richard Millar, chairman of the board of Northrop Aircraft, stated last week that he thinks the time has come for serious consideration of reinstituting the war-time "V" loans, whereby manufacturers could get government loans against contracts for aircraft production. Millar said that the subject had been discussed among top manufacturing officials and that steps will probably be taken in the very near future to seek such reinstitution.

The reason for the "V" loan is that manufacturers are unable to finance the initial stages of aircraft production, which they are now forced to do because of government contract routine. Even though progress payments are made on fixed price contracts up to 75% of the total contract price, there is a time lag in these payments. On the cost-plus-fixed-fee type of contract, the time required to complete the contractual paper work required before payment is made is such that manufacturers in most cases pay out from 40 to 50% of the total contract price before reimbursement is forthcoming. It is a well known fact that aircraft companies do not have the capital for such financing.

C-W Denies BW Report

An article in the Nov. 6 issue of *Business Week* stating that Curtiss-Wright Corp. is discontinuing the manufacture of aircraft to concentrate upon engine, propellers, and non-aviation products was declared "entirely unfounded" by C-W.

Company said "this misleading report was apparently based on the recent announcement that C-W will not build the F-87 jet fighter because of a change in the U. S. Air Force's tactical requirement. Actually, studies are continuing on the application of the principles of the F-87 to other types of aircraft more immediately required."



Blade Checker—Shown above is the Pant-O-Scriber Blade Checker manufactured by Universal Engraving & Colorplate Co. of Cleveland, Ohio. The unit is capable of checking the compressor and turbine blades of jet engines in record time with optimum accuracy. Its operation was clocked at 43 seconds for a 3-section blade, and blades were completely checked for contour, twist, thickness, width, etc. in less than a minute. In addition to lowering inspection times the new unit also makes a permanent inspection record of each blade which can be used for comparative purposes during design development.

U. S. Domestic Airline Traffic for September

Airlines	Revenue Passengers	Revenue Passenger Miles	Available Seat Miles	Passenger Load Factor %	Mail Ton-Miles	Express Ton-Miles	Freight Ton-Miles	Total Ton-Miles Rev. Traffic	Available Ton-Miles Flown	% Available Ton-Miles Used	Revenue Plane-Miles	Scheduled Miles	% Scheduled Miles Completed
American	296,276	134,041,000	211,639,000	63.33	728,010	479,289	2,132,816	16,162,226	29,547,417	54.70	5,224,282	5,079,498	99.14
Braniff	49,938	17,181,000	32,485,000	52.89	78,993	69,802	146,762	1,938,448	3,902,664	49.67	947,461	946,237	98.99
Capital	97,510	26,479,000	49,555,000	53.43	66,629	142,959	585,098	3,325,259	6,608,376	50.32	1,578,447	1,546,679	98.62
Caribbean	5,847	379,000	887,000	42.73	489	....	1,452	32,411	81,812	39.62	35,804	36,479	96.77
C & S	25,810	9,194,000	17,455,000	52.67	40,988	50,944	42,826	1,017,596	2,248,939	45.25	652,289	652,982	99.13
Colonial	16,198	4,471,000	6,483,000	68.96	6,077	4,213	5,265	466,105	836,585	55.71	311,733	295,735	99.89
Continental	15,476	5,593,000	10,254,000	54.54	15,050	8,686	23,798	583,795	1,131,939	51.57	498,683	495,676	99.97
Delta	41,895	14,590,000	27,485,000	53.08	65,741	66,069	145,239	1,678,184	3,648,553	46.00	1,028,813	1,046,506	98.19
Eastern	165,029	72,017,000	122,331,000	58.87	346,143	308,829	549,583	8,317,460	18,670,688	44.55	3,944,212	4,005,136	98.65
Hawaiian	28,002	3,886,000	6,185,000	62.83	3,960	10,318	55,225	397,873	723,654	54.98	286,664	243,874	99.52
Inland	6,785	2,482,000	3,813,000	65.09	7,566	4,670	7,186	257,198	399,997	64.30	190,638	191,400	99.60
MCA	28,112	8,367,000	14,309,000	58.47	25,214	16,810	19,450	863,484	1,481,616	58.28	709,198	704,340	99.71
National	14,601	7,701,000	22,499,000	34.23	28,922	38,293	51,045	905,956	2,380,914	26.80	558,872	603,500	92.44
Northeast	31,093	5,983,000	11,041,000	54.19	8,142	8,582	24,774	575,120	1,094,348	52.55	343,732	346,974	96.46
Northwest	52,859	29,714,000	44,062,000	67.44	172,005	171,992	333,373	3,526,364	6,107,903	57.73	1,359,947	1,355,596	99.65
TWA	118,525	75,631,000	139,016,000	54.40	627,204	536,237	989,958	9,426,604	17,773,769	53.04	4,905,650	4,853,498	98.72
United	196,693	116,308,000	169,462,000	68.63	810,926	624,555	1,916,985	14,515,179	25,365,416	57.22	5,029,330	4,997,739	98.55
Western	26,017	10,333,000	17,029,000	60.68	38,449	28,464	48,919	1,104,899	2,211,165	49.97	543,585	533,326	98.44
TOTALS	1,216,666	544,350,000	905,990,000	60.08	3,070,508	2,570,712	7,079,754	65,094,161	125,215,755	51.98	28,149,340	27,935,175	98.67

U. S. International Airline Traffic for September

Airlines	Revenue Passengers	Revenue Passenger Miles	Available Seat Miles	Passenger Load Factor %	U. S. Mail Ton-Miles	Foreign Mail Ton-Miles	Express Ton-Miles	Freight Ton-Miles	Total Ton-Miles Rev. Traffic	Available Ton-Miles Flown	% Available Ton-Miles Used	Revenue Plane-Miles	Scheduled Miles	% Scheduled Miles Completed
American	6,749	4,748,000	8,549,000	55.54	6,980	1,654	....	103,656	616,601	1,203,934	51.22	189,790	219,704	86.38
Amer. O'Seas	10,020	20,012,000	30,753,000	66.48	87,995*	26,592	579,337	....	2,842,570	4,578,553	62.08	855,096	745,711	99.15
Braniff	786	1,358,000	4,416,000	30.75	942	93	....	6,406	138,652	619,423	22.38	88,322	88,322	100.00
C & S	1,676	1,718,000	4,864,000	35.32	707*	....	....	19,101	197,286	489,067	47.08	97,282	100,709	96.60
Colonial	1,422	1,114,000	2,476,000	44.99	1,065*	87	....	5,019	127,181	366,758	34.68	56,800	56,800	100.00
Eastern	1,891	1,967,000	3,242,000	60.67	3,411*	....	....	42,606	250,153	370,115	67.59	58,240	62,400	93.33
National	2,755	861,000	1,864,000	46.19	779	....	16,985	....	106,771	235,369	45.36	33,543	34,680	92.66
Northwest	2,765	6,064,000	8,590,000	70.60	118,556	15,826	7,892	137,263	934,093	1,329,457	70.26	338,010	343,838	95.85
Panagra	7,408	8,685,000	14,955,000	58.07	18,216	26,153	109,555	40,710	1,142,289	2,218,566	51.49	474,477	478,421	97.42
Pan American														
Latin Amer.	55,250	47,293,000	84,552,000	55.93	197,737	63,869	1,605,106	30,504	6,723,471	12,097,184	55.58	2,353,299	2,472,548	94.63
Atlantic	12,550	32,013,000	46,059,000	69.50	190,227*	55,105	474,102	175,860	4,390,424	6,803,727	64.53	1,319,636	1,163,821	96.18
Pacific	8,771	25,624,000	35,493,000	72.19	321,076	35,637	401,475	....	3,279,344	5,031,130	65.18	1,417,318	1,340,820	99.96
Alaska	5,024	4,550,000	9,972,000	45.63	35,644	....	410,174	....	909,503	1,336,969	68.03	231,005	199,327	99.35
TWA	9,461	29,041,000	46,477,000	62.48	174,380*	87,590	484,943	....	3,972,119	6,275,918	63.29	1,314,417	1,238,588	98.96
United	3,440	8,178,000	9,452,000	86.52	28,504	....	14,923	....	913,035	1,032,004	88.47	216,129	144,000	100.00
TOTALS	129,968	193,226,000	311,714,000	61.98	1,186,219	312,566	4,104,492	561,125	26,543,492	43,918,174	60.43	9,043,364	8,689,649	96.95

* In addition to mail ton miles the following international parcel post ton miles were listed: American Overseas 16,433; C & S 25; Colonial 70; Eastern 29; PAA Atlantic Div. 15,124; TWA 76,463

NOTE: Data in above tabulations were compiled by American Aviation Publications from monthly reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for Braniff to South America; C & S to Havana; Colonial to Bermuda; Eastern to Puerto Rico; National to Havana; Northwest to Orient, and United to Honolulu. Operations of U.S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedures.

U. S. Feeder Airline Traffic for September

Airlines	Revenue Passengers	Revenue Passenger Miles	Available Seat Miles	Passenger Load Factor %	Mail Ton-Miles	Express Ton-Miles	Freight Ton-Miles	Total Ton-Miles Rev. Traffic	Available Ton-Miles Flown	% Available Ton-Miles Used	Revenue Plane-Miles	Scheduled Miles	% Scheduled Miles Completed
All American	....	....	....	...	3,983	3,339	....	7,322	27,345	26.78	156,521	159,328	98.24
Challenger	2,255	586,000	2,245,000	26.10	3,160	2,502	6,269	70,847	252,860	28.02	118,159	122,200	96.69
Empire	2,249	514,000	1,829,000	28.10	1,947	911	....	52,024	139,634	37.26	87,108	84,960	99.72
Florida	926	126,000	534,000	23.66	594	267	....	12,938	58,101	22.27	66,401	66,780	99.43
Monarch	3,084	786,000	2,691,000	29.19	2,527	1,672	7,068	90,189	248,326	36.32	150,578	151,671	98.55
Piedmont	5,250	1,222,000	3,947,000	30.70	2,202	2,843	1,991	124,144	365,839	33.93	187,899	191,280	99.23
Pioneer	8,795	2,473,000	7,976,000	31.01	7,292	1,711	4,072	230,618	843,957	27.33	332,340	328,560	99.79
Southwest	11,286	2,091,000	5,327,000	39.25	4,104	3,335	5,765	222,907	464,906	47.95	221,990	227,464	96.42
Trans-Texas	2,459	605,000	3,923,000	15.42	5,121	1,359	707	60,323	346,189	17.42	186,804	188,580	99.05
West Coast	8,846	1,063,000	2,317,000	45.85	794	924	....	95,402	227,328	41.96	115,951	117,396	97.88
Wis. Central	1,672	299,000	953,000	31.37	1,645	2,483	....	32,558	103,911	31.33	108,487	118,650	90.86
TOTALS	45,982	9,765,000	31,742,000	30.76	33,369	21,346	25,872	999,272	3,078,396	32.45	1,732,238	1,756,869	97.89
Helicopter Mail Service													
Los Angeles	....	....	....	...	2,793	....	....	2,793	12,186	22.92	26,377	29,194	88.58

U. S. Domestic Airline Revenue & Expenses for August

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	$ 8,059,134	$ 7,001,095	$ 440,735	$ 152,782	$ 359,670	$ 64,427	$ 10,497	$ 7,894,494	$ 3,773,032	$ 4,121,462	$ 164,640
Braniff	1,060,762	963,169	42,640	20,933	20,461	9,872	1,255	1,102,751	523,680	579,071	-41,989
Capital	1,953,123	1,468,849	245,635	47,989	103,786	9,160	26,492	1,943,435	884,139	1,059,296	9,688
Caribbean	54,326	37,139	15,139	....	1,500	219	....	49,495	23,303	26,192	4,831
C & S	723,862	538,598	149,359	16,073	10,629	5,434	....	665,141	286,918	378,223	58,720
Colonial	394,607	283,211	104,467	1,686	1,300	2,735	444	305,470	128,604	176,866	89,137
Continental	470,658	336,535	109,808	3,440	5,645	2,558	4,667	392,136	172,116	220,020	78,522
Delta	1,174,381	850,968	254,331	21,842	31,868	8,909	5,065	1,111,495	519,396	592,099	62,886
Eastern	4,605,795	4,213,299	146,785	75,274	97,151	55,506	30	4,788,395	2,599,403	2,188,992	-182,600
Hawaiian	480,873	428,369	1,824	10,549	24,045	11,983	3,849	351,996	154,220	197,776	128,877
Inland	215,576	158,894	48,563	1,600	1,942	1,222	....	174,162	75,683	98,479	41,414
MCA	613,039	508,065	82,013	6,411	6,577	4,159	4,041	595,355	266,688	328,667	17,684
National	557,674	471,459	61,270	5,510	6,129	8,404	...	853,551	475,262	378,289	-295,877
Northeast	498,407	424,461	63,239	3,491	6,082	2,283	650	458,837	221,497	237,340	39,570
Northwest	2,337,680	2,091,699	120,118	50,152	50,035	15,989	4,477	2,530,584	1,273,105	1,257,479	-192,904
TWA	5,408,004	4,652,952	375,311	146,375	146,898	55,105	17,124	4,829,647	2,309,473	2,520,174	578,357
United	8,033,109	6,947,718	485,743	189,677	282,723	67,320	7,356	7,547,543	3,306,554	4,240,989	485,566
Western	681,825	593,555	39,904	8,000	10,398	4,890	6,138	715,910	293,930	421,980	-34,085
TOTALS	37,322,835	31,970,035	2,786,893	761,784	1,166,839	330,175	92,085	36,310,397	17,287,003	19,023,394	1,012,437

NOTE: These figures are taken from monthly reports filed by the airlines with CAB. The data are tentative and subject to later change.

U. S. International Airline Revenues & Expenses for August

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	U. S. MAIL REVENUES	FOREIGN MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	$ 305,519	$ 256,408	$ 5,207	$ 3,795	$	$ 19,766	$ 3,742	$	$ 308,865	$ 158,400	$ 150,465	$ -3,346
Amer. O'Seas	2,637,186	1,856,320	383,126	47,239	246,311	....	21,088	74,400	2,008,827	1,031,253	977,574	628,358
Braniff	172,040	80,881	87,133	281	....	1,386	1,792	....	166,017	69,843	96,174	6,023
C & S	246,565	114,258	127,594	....	....	2,782	1,899	....	215,010	102,051	112,959	31,554
Colonial	118,359	82,130	29,813	....	....	6,032	384	....	125,630	55,983	69,647	-7,271
Eastern	98,733	88,623	2,320	....	....	6,622	1,167	....	86,708	42,678	44,030	12,025
National	76,631	65,251	3,727	....	6,077	....	1,576	....	64,157	29,167	34,990	12,474
Northwest	1,025,360	525,716	381,150	35,886	2,562	68,937	10,931	....	801,966	405,556	396,410	223,394
Panagra	1,017,042	777,244	93,000	82,360	92,482	....	32,265	-1,312	1,167,901	545,664	622,237	-150,859
Pan American												
Latin Amer.	5,333,950	3,201,701	1,102,236(1)	145,642	589,415	....	101,383	68,378	4,989,492	1,976,172	3,013,320	344,459
Atlantic	3,913,708	2,581,658	733,740(2)	79,687	318,525	....	63,295	102,929	3,586,507	2,026,094	1,560,413	327,201
Pacific	2,844,974	1,671,883	928,710(3)	37,183	173,261	....	28,452	-44	2,739,990	1,460,669	1,279,321	104,984
Alaska	479,746	360,150	46,341(4)	....	68,839	....	1,928	2,000	450,674	210,069	240,605	29,072
TWA	3,525,210	2,431,843	555,260	175,459	177,005	....	72,874	79,664	3,252,058	1,651,403	1,600,655	273,151
United	404,846	354,812	29,189	....	7,517	....	4,798	....	312,216	166,931	145,285	92,630
TOTALS	22,199,869	14,448,878	4,508,546	607,532	1,681,994	105,525	347,574	326,015	20,276,018	9,931,933	10,344,085	1,923,849

1) Represents company's estimate of amount which should be received in accordance with terms of the Civil Aeronautics Act when permanent rates are established. Estimate exceeds permanent rates under review by $345,626
2) Estimate exceeds temporary rates in effect by $192,726.
3) Temporary rates in effect exceed estimate by $297,942.
4) Temporary rates in effect exceed estimate by $54,995.

U. S. Feeder Airline Revenues & Expenses for August

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American	$ 86,426	$	$ 84,879	$ 1,256	$	$	$ 188	$ 91,029	$ 46,678	$ 44,351	$ -4,603
Challenger	Figures not yet available. Data will be reported at a later date.										
Empire	80,838	22,096	57,057	223	....	132	770	70,021	38,090	31,931	10,817
Florida	23,779	7,355	15,634	80	....	40	337	56,560	27,268	29,292	-32,781
Monarch	122,711	48,475	69,069	656	1,996	215	....	129,289	71,993	57,296	-6,578
Piedmont	189,885	70,797	117,232	800	551	505	....	168,245	98,441	69,804	21,640
Pioneer	296,245	131,814	152,710	724	1,556	760	....	255,832	139,875	115,957	40,413
Southwest	228,505	106,934	117,408	914	2,368	508	212	205,799	107,030	98,769	22,706
Trans-Texas	139,718	33,052	106,890	-767	224	72	....	136,818	73,804	63,014	2,900
West Coast	107,062	65,438	41,451	462	....	173	425	117,055	58,526	58,529	-9,993
Wis. Central	89,436	20,325	67,891	949	....	134	....	78,454	42,319	36,135	10,982
TOTALS	1,364,605	506,286	830,221	5,297	6,695	2,539	1,932	1,309,102	704,024	605,078	55,503
Helicopter Mail Service											
Los Angeles	31,204	....	31,204	....	....	....	....	31,634	21,281	10,353	-431

NOTE: These figures are taken from monthly reports filed by the airlines with CAB. The data are tentative and subject to later change.

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FOR SALE

By

AMERICAN AIRLINES, INC.

43-02 Ditmars Blvd.
ASTORIA, L. I., NEW YORK

- **Douglas DC-3 Airplane Parts, Accessories and Ground Equipment**
- **Wright G-102 (C9GB, R-1820) Engine Parts, Accessories and Components**
- **P&W R-1830-92 Engine Parts, Accessories and Components**

ALSO

- **Douglas DC-4 Airplane Parts and Accessories and Ground Equipment**
- **P&W R-2000-13 (2SD13G) Engine Parts, Accessories and Components (many of which are interchangeable with R-2000-7-9-11 Engines).**

These inventories are available for inspection at our warehouses at Astoria, L. I., New York, Tulsa, Oklahoma and Fort Worth, Texas, and offered F.O.B. these points for domestic shipment at very attractive prices.

Prompt attention will be given to all requests for quotations directed to the attention of the Director of Surplus Sales at the above address. Write, Telegraph or Telephone (Ravenswood 8-1000).

Classified Advertising

The rates for advertising in this section are as follows: "Help Wanted," "Positions Wanted," "Aircraft Wanted or For Sale," and all other classifications $1.00 a line, minimum charge $4.00. Estimate bold face heads 30 letters and spaces per line; light body face 40 per line; box numbers add two lines. Terms, cash with order. Forms close 20 days preceding publication date. Rates for display advertisements upon request. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1025 Vermont Avenue, NW., Washington 5, D. C.

FOR SALE

DOVE AIRCRAFT

Commercial considerations demanding operation of larger aircraft, Central African Airways Corporation are disposing of their fleet of seven de Havilland Dove aircraft, together with complete range of spare power plants, engines, propellers, engine and airframe spares and engine overhaul tools. These aircraft are offered in immediate fly away condition and will be delivered if required.

Full details of aircraft technical and operational experience available immediately on application to: The Technical Manager, Central African Airways Corporation, P. O. Box 1319, Salisbury, Southern Rhodesia.

DELUXE 23-PLACE CATALINA (PBY5A). A-1 CONDITION. NEW ENGINES. WRITE OR WIRE P. O. BOX 1891, LONG BEACH, CALIFORNIA.

BE AN AIRLINE PILOT. "Airline Piloting," written by airline captain Raymond Bullock, tells you how to obtain employment on an airline, what to do when you obtain employment. 163 pages of cloth-bound, non-technical information and illustrations endorsed by airline chief pilots, private pilots, and government officials. Valuable to those contemplating an airline career and co-pilots. Of equal value to any pilot who flies cross-country. Knowledge is safety. An excellent Christmas gift. $2.50 postpaid. World Press, Dept AP, 1817 California St., Denver 2, Colorado.

FOR SALE

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WANTED—will give $8,000.00 cash, and up, depending upon condition, for flyable DC-3's or C-47's. Need not be licensed. Box 2720, Winston-Salem, N. C.

WANTED young graduate engineer, preferably having two or three years scheduled airline experience to serve as maintenance service engineer for certificated local service airline. An excellent opportunity. P. O. Box 2720, Winston-Salem, N. C.

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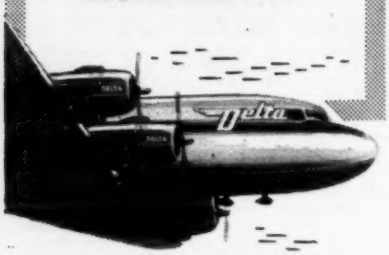
WHEN AND WHERE

News of Delta's New DC-6's



An entirely new pattern of luxury air service to and through the South has been created by the Delta DC-6's now flying between Chicago and Miami.

Newest of all airliners in service, and with 115 improvements not found in original models, the Delta DC-6's fly non-stop between Chicago and Miami and Chicago-Atlanta, and operate express trips via Cincinnati, Atlanta and Jacksonville.

This gives cities as widely separated as San Francisco and Toronto one-stop service to Miami, with Delta providing more than 300-mile-an-hour speed, plus uncrowded comfort and luxury, on the Chicago-Miami segment.

There are three flights daily from Chicago to Miami, and the schedules fit into the pattern of flights of American, United, TWA, Northwest, and TCA. Cincinnati flights provide additional connections with American and TWA, while the Atlanta flights are linked with Capital service from such points as Pittsburgh and Buffalo.

Starting on January 1st, this luxury service will be extended even further. DC-6 flights from Atlanta to New Orleans and Dallas begin on that date.

General Offices: Atlanta, Ga.

Delta AIR LINES

WINGS OF YESTERDAY

25 Years Ago

General Electric Co. of Schenectady, N. Y., announced that Postmaster General New had ordered all air mail planes to be equipped with radio sending and receiving sets.

•

As of December, 1923, the U. S. held 35 out of 42 world aviation records. The remaining seven records were shared as follows: France 3, England 2, Italy and Spain one each.

10 Years Ago

(In AMERICAN AVIATION)

On Nov. 19, 1938 President Roosevelt participated in a ground-breaking ceremony at the site of the new $9,000,000 airport to be constructed for Washington, D. C. at Gravelly Point.

•

Plans for merging Imperial Airways, Ltd. and British Airways, Ltd. under government control were announced in London by Air Secretary Sir Kingsley Wood.

•

According to CAA, production of aircraft for domestic civil use in the U. S. for the first nine months of 1938 dropped off 28% as compared with the same period of 1937, but military aircraft production increased 95%.

LETTERS

In Appreciation

To the Editor:

In behalf of the North American Division of KLM Royal Dutch Airlines may I extend our sincere thanks for your fine editorial tribute paid to the late Hendrick "Curley" Veenendaal and Commander K. D. Parmentier.

As stated in your editorial, the loss of these two men is a deep one for KLM and we are grateful for the many condolences received from their friends in aviation circles.

JAY ABBOTT
KLM Royal Dutch Airlines

BOOKS

JANE'S ALL THE WORLD'S AIRCRAFT 1948. Compiled and Edited by Leonard Bridgman. Published in U. S. by The Macmillan Co., 60 Fifth Ave., New York, and in Great Britain by Sampson Low, Marston & Co., Ltd., 25 Gilbert St., London, W. 1. 501 editorial pages. Price $20.

This 36th edition of *Jane's All the World's Aircraft* provides a usable reference with many new illustrations and related text. It is a problem to appreciate the changes made in a text of this nature from year to year until called upon to locate an elusive piece of information. It does appear that the extensive, new aircraft index should be particularly useful since it lists alphabetically the military designation of aircraft, the popular name and the manufacturer.

The book is still divided into military, civil, aircraft and engine sections with good proportioning of each. This is exemplified by the 320 pages devoted to the aircraft section, 90 pages in the engine section, 53 pages of general civil aviation data and 20 pages of parallel military aviation data.

With over 700 major illustrations, the new Jane's shows an unusual percentage of new illustrations. In the aeroplane section 485 of the 582 photographs and drawings are new. Space devoted to Russian aviation activities has been doubled.

PRIVATE PILOT EXAMINATION, by Charles A. Zweng. Pan American Navigation Service, 12021 Ventura Boulevard, North Hollywood, Calif., 64 pp. Price $1.

In this new and revised edition of the CAA Private Pilot Rating, Zweng has provided a general background in CAR as well as a question and answer guide relating to the private pilot examination. The first 44 pages are devoted to a review of CAR divided into Air Traffic Rules, General Operation Rules and Pilot Certificates. The balance contains 100 multiple choice questions and answers on traffic and operations rules.

OBITUARY

Deering Howe

Deering Howe, 48, president of Transair Inc.—a non-certificated domestic passenger and freight air carrier, with offices at 250 Park Ave., New York, N. Y.—died in Havana Nov. 7 following a heart attack after swimming in waters near Varadero, a Havana resort community. In addition to wide business interests, Howe also was chairman of the board of Aero Industries Corp.

Herbert G. Brackley

Air Commodore Herbert G. Brackley, 54, chief executive of British South American Airways, was drowned Nov. 15 while swimming off Copacabana Beach, Rio de Janeiro, Brazil. Brackley became BSAA's chief executive last Mar. 25, following dismissal of Air Vice Marshal Donald Bennett. He flew with the RAF in World War I and joined Imperial Airways on its formation in 1924. In the last war he was RAF Transport Command's senior air staff officer.

Richard W. Kirschbaum

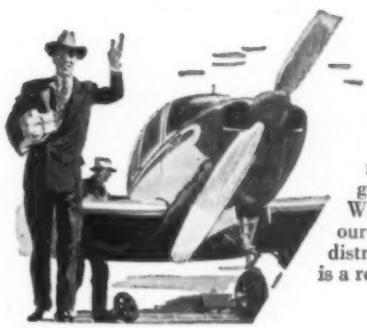
Richard W. Kirschbaum, aviation editor of the *Newark Evening News* and a v.p. of the Aviation Writers Association, died in Doctors Hospital, Newark, on Nov. 20 from a heart attack suffered at Detroit, Oct. 20, while attending the National Aviation Clinic. Kirschbaum, who was 54, was widely known in aviation circles. He served in both World War I and II, in the latter as public relations officer with rank of major for the 14th Army Air Force in China.

Customer service gets a *lift!*

...with a company-owned Bonanza

Constant Hosiery Stores are scattered throughout the Middle West. President H. E. Constant stays in touch by Bonanza, makes it home to Milwaukee for dinner, too! "Our Bonanza operates 12 months a year," he states. "It's invaluable to rush promotional material and merchandise right from our mill."

"We deal in 'out-size' products, such as trailerized truck tanks," says J. K. Downer of Scientific Brake and Equipment Company, Saginaw, Mich., "and our sample case would fill freight cars. We pick up distant customers with our four-place Bonanza, bring them over for plant inspection and return them in hours. Sales are easier to make. We get to know our customers better, too." All this at the Bonanza's amazingly low operating cost—measured in pennies per mile.



"One of our agricultural machinery customers was combining wheat in Texas when he needed parts—fast," reports A. A. Dryden, president of Oberlin Motor Company, Oberlin, Kansas. "He was 520 miles away, but our four-place Bonanza got parts there three hours after his call. When we give service like this we *keep* our customers, even though other distributors are nearer. Our Bonanza is a real sales tool!"

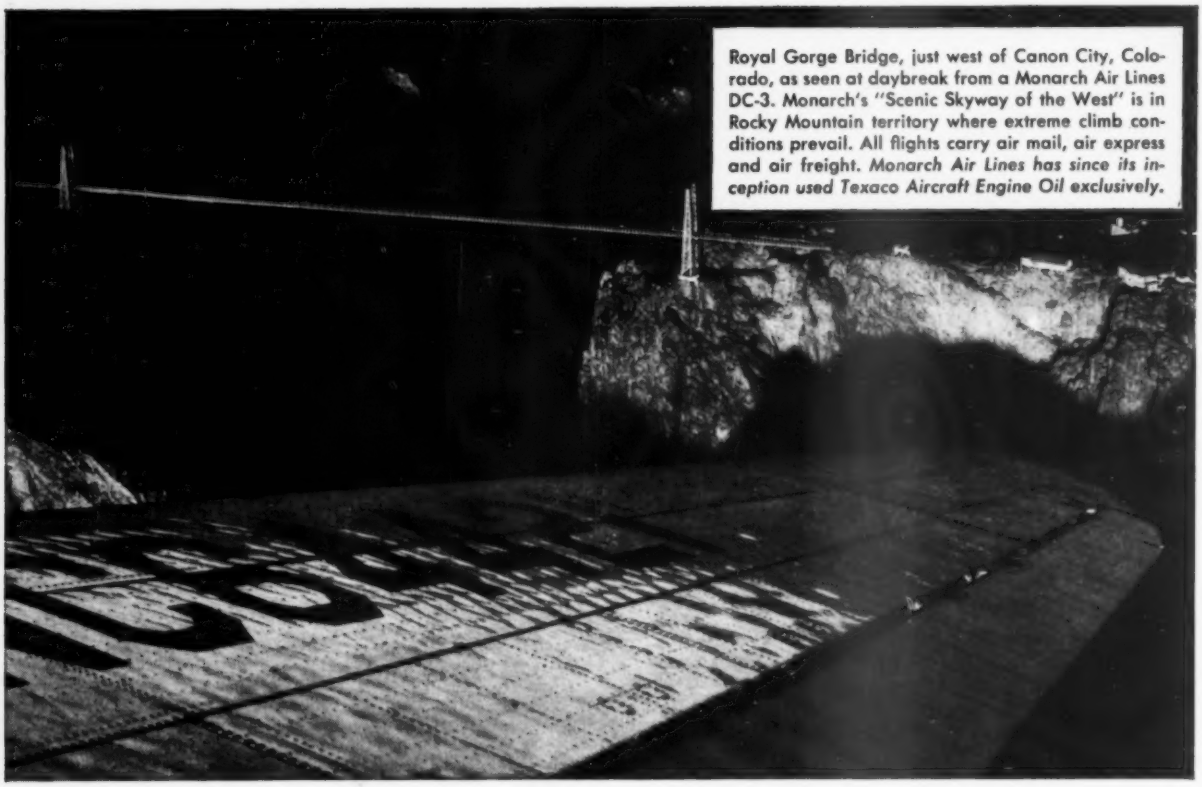
Cut waste time out of travel time

Add up the hours you spent last month just "going somewhere" on business. Cut them by two-thirds. That's what a company-owned Bonanza can do! A note on your company letterhead will bring an informative 60-page brochure on "The Air Fleet of American Business." Write today to Beech Aircraft Corporation, Wichita, Kansas, U. S. A.

Top speed, 184 mph
Cruising speed, 170 mph
Range, 750 miles

BEECHCRAFT
BONANZA
MODEL 35

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS



Royal Gorge Bridge, just west of Canon City, Colorado, as seen at daybreak from a Monarch Air Lines DC-3. Monarch's "Scenic Skyway of the West" is in Rocky Mountain territory where extreme climb conditions prevail. All flights carry air mail, air express and air freight. *Monarch Air Lines has since its inception used Texaco Aircraft Engine Oil exclusively.*

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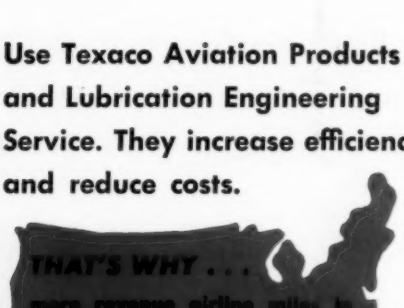

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